

UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK

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SHAUNA NOEL and EMMANUELLA SENAT,

Plaintiffs,

-against-

15-CV-5236 (LTS) (KHP)

CITY OF NEW YORK,

Defendant.

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**DECLARATION OF PROFESSOR ANDREW A. BEVERIDGE  
IN SUPPORT OF PLAINTIFFS' MOTION FOR PARTIAL SUMMARY JUDGMENT**

**Part 1: Declaration and Exhibits**

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3	Projects by CD Typology, with CD Typology Demographic Data
4	CD Typologies, with Project Counts and Demographics
5	Distribution of NYC White Population by Census tract and CD boundaries overlaid (2013-17 ACS)
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7	Distribution of NYC Hispanic Population by Census tract and CD boundaries overlaid (2013-17 ACS)
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ANDREW A. BEVERIDGE declares, pursuant to 28 U.S.C. § 1746, that the following is true and correct:

**A. Qualifications and experience**

1. I am a Professor of Sociology at Queens College and the Graduate Center of the City University of New York and served as Chair of the Queens College Sociology Department from 2006 to 2018. My primary responsibilities at Queens College and the Graduate Center are teaching statistics and research methods at the graduate and undergraduate levels, and conducting quantitative, statistically based social research. I have a Ph.D. in Sociology and B.A. in Economics from Yale University. I have been a professor since 1973, first at Columbia University until 1981, and then at Queens College and the Graduate Center of the City University of New York.

2. My areas of expertise include demography and the statistical and quantitative analysis of social science datasets, most particularly including Census data, survey data and

administrative records. I am also an expert in the application of Geographical Information Systems (“GIS”) technology to the analysis of social patterns. I am also considered an expert in urban change, particularly neighborhood change and long-term urban change. I regularly publish results and analyses in professional journals and peer-reviewed books. Some of my analyses have served as the bases for articles in the *New York Times*, where I have served as a demographic consultant since 1993.

3. I am the co-founder and CEO of Social Explorer Inc., a website that provides demographic and other social data in a visual form. The site and related projects have won eight awards and, in the last year, have had over 1.5 million users. The subscription product is used by over 300 libraries at educational institutions, and is also used by government, non-profit, and business customers. Beyond this, the company has developed curricular materials for over 300 digital textbook titles. I have also served as a consultant to public and private entities, where I provide services related to demographic analysis.

4. I have frequently provided expert opinions and testimony in demographic and statistical analysis, including numerous cases involving housing discrimination and housing segregation. My curriculum vitae is attached hereto as Exhibit 1.<sup>1</sup>

## **B. Summary of findings**

5. I examined publicly available Census Bureau and related data, and data from defendant’s affordable housing lotteries, including some analyses of those data from defendant’s expert, Dr. Bernard Siskin. I determined, among other things, that:

a. New York City was and remains characterized by significant levels of residential

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<sup>1</sup> I am being compensated at the rate of \$200/hour for my work in this case; I am also being reimbursed for expenses, including the expenses for payment of members of my team.

segregation on the basis of race and Hispanic status. At the community district level, that citywide segregation is reflected in significant variation from one community district to another in terms of the distribution of racial groups and Hispanics.

b. Defendant's community preference policy in its affordable housing lotteries confers significant advantages on its beneficiaries, and significant disadvantages on those who are non-beneficiaries, with non-beneficiaries being denied a level playing field in competing for affordable housing. The policy-imposed disadvantages include imposing on non-beneficiaries lower odds of being awarded a housing unit; less likelihood of having one's application even reviewed and considered by a developer;<sup>2</sup> and a greater likelihood of being closed out of some or all of the housing unit types for which the non-beneficiary applicant was apparently eligible at the time of developer review.

c. The benefits and detriments of defendant's community preference policy are distributed in such a way as to create substantial discriminatory effects on the basis of race and Hispanic status; which demographic groups are victims of the policy varies according to which racial or Hispanic group dominates the community district. In other words, the policy, carried out on a community-district basis, causes a variety of localized discriminatory effects.

d. Defendant's community preference policy perpetuates segregation substantially more (and allows integration substantially less) than what would exist without the policy.

e. The overwhelming majority of unique applicants to housing lotteries apply at least 75 percent of the time to lotteries for housing *outside* of their community district.

f. The rent burden experienced by those who get the benefit of defendant's policy is similar to that experienced by those who are disadvantaged by defendant's policy.

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<sup>2</sup> References to "developer" are meant to encompass the developer's marketing agent where it is the marketing agent handling the lottery process in a particular lottery project.



### C. Introduction

6. Defendant has had and continues to have rules (adopted and enforced by HPD, the Department of Housing Preservation and Development, and by HDC, the New York City Housing Development Corporation (together, “the agencies”) that govern the award of housing units in defendant-administered lotteries for development or preservation projects where some or all of the units are within various levels of what defendant considers “affordable.” The eligibility criteria for some units makes them affordable, for example, to households with an annual household income up to 60 or 80 percent of Area Median Income (“AMI”). Other units are “affordable” at a different level: perhaps 130 or even 165 percent of AMI.<sup>3</sup>

7. The case and this declaration deal with that portion of affordable housing units that are distributed by what is referred to as a housing lottery for initial rent-up. Neither is concerned with units that are awarded through means other than the lottery (for example, units that are awarded by agency referral or with units that have been awarded as open market, the latter being a process that is supposed to be activated, on agency approval, only when one or more apartment unit-types have not been able to be filled in the lottery). Both also put to the side applicants who, at application, are not New York City residents, and the small number of units awarded through the lottery to non- New York City residents.<sup>4</sup>

8. The units in a project anticipated to be “lotteried” off are advertised to the public, including on “Housing Connect,” defendant’s online portal for advertising lotteries and accepting

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<sup>3</sup> See, e.g., Plaintiffs’ Statement of Undisputed Facts (“PS”), at ¶¶ 4-7.

<sup>4</sup> New York City applicant households have a general preference over non- New York City applicant households. See PS at ¶ 24, n.9. Unless otherwise specified, references to “all households,” “all units” or to “all” of a certain type or category of household or unit are to be understood as terms that do *not* encompass non- New York City applicant households, nor units awarded to non- New York City residents. Residents of places outside of New York City accounted for approximately 1.1 percent of the units awarded through the lottery (mostly higher-AMI units) and 5.5 percent of applications analyzed for this declaration.

applications for them. (“Housing Connect” also refers to the database in which application information provided by applicant households is stored.)

9. Within a project’s lottery, there are, in the overwhelming percentage of lotteries, multiple apartment “unit types” that are, at least initially, available to be competed for. Each unit type in a lottery is characterized by a unique combination of number of bedrooms, a monthly rent, a minimum income, and a range of permissible household sizes, with the maximum permissible household income generally varying by each permissible household size. Each unit type is also associated with a particular AMI level of household income.

10. As I understand it, there is no “pre-qualification” or “qualification” process at the entrant stage. An applicant household who wishes to apply is permitted to do so, so long as required information is provided.<sup>5</sup> Neither HPD nor HDC make any initial threshold judgment about the qualifications of an applicant household.<sup>6</sup>

11. In some respects, the process at this point is unremarkable: those who have wanted to apply have applied; once the lottery application process has ended, the agencies assign random sequence numbers to each application to determine the order in which a developer is obliged to review them; and several pieces of data about applicant households, including, notably, the applicant household’s self-reported annual household income and household-size, are made available to the developer.

12. If this were all that there were to the process, there would be no case: each applicant

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<sup>5</sup> I am not opining on the extent to which inhibition effects – including potentially the existence of the preference itself – could have suppressed applications from some households residing in New York City outside of the community district for which preference is given.

<sup>6</sup> Notation is made – for later review by a developer – as to whether an applicant household appears to have submitted duplicate applications or whether a member of an applicant household is listed on more than one application.

household would have an equal chance to be considered by the developer in the lottery overall, and if selected for consideration, in respect to units for which the applicant household is apparently eligible.

13. But imposed on the random, equal-access process as a fact of life for all applicants (even before they are assigned a random lottery number) are a number of set-aside and preference rules, including rules that provide for priority being given for 50 percent of units anticipated to be allocated by lottery<sup>7</sup> to those applicant households who live in the community district (“CD”) where the development is located (what I refer to as the “CD preference area”).<sup>8</sup> This policy, which includes rules as to the ways in which developers are required to subordinate random lottery order when sequencing which groups of applications are treated before other groups of applications, is referred to by the defendant as the “community preference policy” and by plaintiffs as the “outsider-restriction policy.”

14. For the purposes of this declaration, I use interchangeably the terms “CP beneficiaries” and “insiders” to refer to those New Yorkers who live in the CD preference area.<sup>9</sup> I explain later why all applicants who live in the CP preference area are indeed beneficiaries of community preference.<sup>10</sup> I use interchangeably the terms “non-beneficiaries” and “outsiders” to refer to applicant households for a lottery who reside in New York City outside of the CD

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<sup>7</sup> See PS, ¶ 16. There are some circumstances where the percentage of lotteried units that go to applicant households living in the community district can be larger or smaller than 50 percent, but 50 percent is the norm.

<sup>8</sup> In a small percentage of cases, the preference is expanded to cover not only those who live in the community district or districts where the project is located, but also those who live in one or more nearby community districts; occasionally, the additional community districts are not adjacent to the community district in which the housing is being built.

<sup>9</sup> There is a small subset of insiders who, for the purposes of the analyses I have performed, are treated as non-beneficiaries. See discussion, below, at 16-17, ¶¶ 48-53.

<sup>10</sup> See discussion, below, at 19-20, ¶¶ 59-62, and at 52-54, ¶¶ 178-88.

preference area.

15. For the purposes of this declaration, where I use the term African American or Black, I am referring to “non-Hispanic Blacks” as classified by the Census Bureau; when I use the term White, I am referring to “non-Hispanic Whites” as classified by the Census Bureau; when I use the term Asian, I am referring to “non-Hispanic Asians” as classified by the Census Bureau; and when I use the term Latino or Hispanic, I am referring to “Hispanics of any race” as classified by the Census Bureau.

16. Where I use the terms “demographic group” or “demographic groups,” I am referring to one or more of the four groups referred to in the preceding paragraph. Where I use the terms “race” or “racial,” I am using them as shorthand for “race or Hispanic status,” unless otherwise specified.

17. The universe of projects that I analyzed consists of 168 of the 185 rental lotteries where defendant had “reconciled” the results between and among multiple types of defendant’s data.<sup>11</sup> These projects are listed by their Housing Connect (“HC”) Project Identification Number in Exhibit 2. Lotteries from among this group had application deadlines for applicant households as early as August 2012 and as late as February 2017; full “lease-up” (that is, the moment at which the award of all of a project’s lottery units for initial occupancy was completed) occurred between October 2012 and July 31, 2018.

18. In the aggregate, the 168 rental lotteries accounted for awards of 10,245 affordable

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<sup>11</sup> In brief, the purpose of reconciliation was to confirm the accuracy of defendant’s records as to which applicant households were awarded lotteried units. This included attempting, insofar as it was possible, to determine the *first* applicant household to be awarded each unit. Decisions as to how to reconcile and what the reconciliation results should be in each particular case were made by defendant. Further reference to the reconciliation process is made in Section XIII of the Sources and Methodology Appendix (separately filed on ECF as Part 2 of my declaration).

housing units through the lottery (“lotteried units”).<sup>12</sup>

19. There were, in total, more than 7.2 million lottery applications for these units from more than 700,000 unique applicant households.

20. The reconciled rental lotteries that I did *not* analyze come in two categories: (a) 100 percent community-preference lotteries; and (b) 15 projects, where only one unit or two units were lotteried off (these 15 lotteries awarded by lottery 25 units in the aggregate). All of these projects are also identified in Exhibit 2. Each project in the 15-lottery group had been advertised as having community preference applicable, even though defendant has described community preference as not being available in projects with fewer than three units; in most of these projects, however, defendant’s data show that community preference was not awarded in respect to any unit.

21. My analyses of lotteries, unit types, unit types awarded, and applicant households needed to take into account the fact that while the policy was *in force* citywide, it was *implemented in each case* at the CD level, and thus could have different impacts (could cause different demographic groups to be hurt) in different parts of the City. The analyses thus needed to recognize how the demographics of different CDs vary. My solution was to create a classification system of seven community district preference area typologies (“CD typologies”) for my disparate impact analyses that I based on 2013-17 5-year American Community Survey (“ACS”) population data:<sup>13</sup> (1) majority White; (2) majority Black; (3) majority Hispanic; (4) majority Asian; (5)

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<sup>12</sup> As a reminder, I note that references to units and to applicant always exclude non- New York City applicant households and units awarded to non- New York City households. Note, also, that defendant did not provide equivalent household information on those who received units *outside* of the lottery process.

<sup>13</sup> 2013-17 ACS 5-year data comprises the most recent 5-year data available when the analysis was performed (data from 2013 to 2017). I was able to aggregate up from the Census block level to the community district level using a map that provided information on the location of every Census block in a community district (CD). The map is available online from the “Bytes of the Big Apple” database from the New York City Department of City Planning at <https://www1.nyc.gov/site/planning/data-maps/open-data/districts-download-metadata.page>. A few blocks (those in parks and other areas with little or no

plurality White; (6) plurality Black; and (7) plurality Hispanic.<sup>14</sup> This methodology provides a classification system that gave me the ability to prove or disprove the existence of a variety of localized disparities in the demographic groups benefitting from the community preference policy and those who are disfavored by the policy; enabled lotteries of different sizes to be weighted appropriately; and created more robust results.

22. A list of the HC Projects, the number of units awarded through the lottery for each such project, the project's CD typology, and the demographic composition of the project's CD preference area, is reported in Exhibit 3. Racial and Hispanic composition for the lotteries in each CD typology, along with the number of lotteries in each typology, is reported in Exhibit 4.<sup>15</sup>

23. As Exhibit 4 shows, while the majority typologies need only include at least 50 percent of a given non-Hispanic race group or Hispanics, the majority-Black typology has an African-American majority of nearly 60 percent, and the dominant racial group in the majority-White and majority-Hispanic CD typologies, respectively, reach or exceed 60 percent. The percentage difference between the dominant group in the CD typology and the next largest group is very substantial in majority typologies, but much less so in plurality typologies.

24. Through my analyses, I determined that defendant's community preference policy generally operates to the substantial detriment of members of a demographic group when members

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population) were not assigned to a community district. The information from the ACS data was disaggregated to the block level based upon the percent of the block group population in each block, and then aggregated up to the CD. This is simply population weighting of block groups to blocks and makes it possible to have reasonable estimates of population.

<sup>14</sup> I sometimes abbreviate these typologies as: MW, MB, MH, MA, PW, PB, and PH, respectively.

<sup>15</sup> To make it possible to have reliable estimates of the composition of each typology based upon the number of units awarded, each CD or CD preference area that had one or more awardees was weighted based upon the total number of awardees in that CD or CD preference area. Thus, the composition of each typology best reflects that experienced by the awardees.

of that group are applying for housing outside of the CD typology in which they are dominant.

25. Likewise, I determined that defendant's policy generally operates to the greatest benefit for members of a demographic group when members of that group are applying *within* the CD typology in which they are dominant. This is, not surprisingly, especially so with regard to the majority typologies, where there is a group that has significant dominance.

26. In other words, defendant's community preference policy imposes a sorting process that would not otherwise exist and does so in a pattern that causes substantial disparities on the basis of race.

27. These disparities are manifested when analyzing the full set of applicants to lotteries ("entrants"). They are manifested when analyzing the subset of entrants whose household size and income, as self-reported and stored in the HC database, met the income- and household-size requirements for at least one unit-type in a lottery, as those requirements are set forth in various of defendant's data<sup>16</sup> ("apparently eligible" applicants). Lastly, the disparities are manifested in terms of the bottom-line: those applicants who are awarded units ("awardees").

28. One can still imagine some saying, "What is the problem? Each racial group is helped somewhere." Indeed (and I confess I was surprised by this), this argument has actually been put forward by the City as its defense the lack of a level playing field for participants.<sup>17</sup>

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<sup>16</sup> My testing for apparently eligible households included that portion of applicant households self-reporting the availability of a housing subsidy who: (a) are not disqualified based on reporting more income than the maximum income permitted for the unit type or types for which they are household-size eligible; or (b) are not already eligible based on their household income compared with the relevant unit types' requirements for minimum and maximum income. I made the determination of apparent eligibility for those applicant households who have reported the availability of a subsidy and who: (a) have household income lower than the minimum income for the relevant unit types; and (b) by the operation of subsidy rules, are nonetheless deemed to be able to afford one or more of the relevant unit types (unit types which permit the applicant household's household-size).

<sup>17</sup> See PS, at ¶ 82-84.

29. But the powerful pattern – in majority CD typologies, unmistakable for entrants, apparently eligible applicants, and awardees – has a *particular* sorting effect. For example, as between Whites and Blacks in lotteries in the majority-White CD typology, White applicant-households are helped in the aggregate, and Black applicant-households are hurt in the aggregate by the community preference policy. When the lotteries take place in the majority-Black CD typology, Black households are helped in the aggregate and White (and Latino) applicant-households are hurt in the aggregate by the community preference policy. The relative difference between the dominant group and the other group(s) referenced is large.

30. The community preference policy has another pernicious result. Because of the policy's effective racial filtering (restricting the percentage of more-diverse outsiders that can move into a CD than would be the case without the policy), the policy has and will perpetuate segregation more (and allow integration less) than would be the case without the policy.

31. This result occurs for all six of the racial pairings that Dr. Siskin and I examined: White versus Black; White versus Hispanic; White versus Asian; Black versus Hispanic; Black versus Asian; and Hispanic versus Asian.

32. Other areas of analysis (corresponding to the conclusions referenced in paragraph 5(e) to 5(f), above), are discussed in the main body of the declaration.

#### **D. Sources and methodology**

33. With scant exception, the data I used were defendant's data provided to plaintiffs in discovery.<sup>18</sup> For example, data about applicant households, including race, household income, household size, claimed disability, address, and defendant-assigned designation of the household

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<sup>18</sup> And as to the few exceptions, the data are publicly available to defendant, as noted where applicable.



as living in the CD preference area for a lottery, came from defendant's Housing Connect database as provided to plaintiffs on or about March 29, 2017.<sup>19</sup> Housing Connect data that had been made available to developers in the form of initial logs, to take another example, were, again, all data that came from defendant (as did final logs with information added to initial logs by developers). Data about which applicant-households were awarded lotteried units and about the data to determine unit type, were found in documents created and updated by the agencies (in the form of "status sheets" with this information and, in the case of HPD, also in the form of tables from its Access database which performed the same function as status sheets). To track the flow of applicants to awarded units required organizing and linking the information, all of which was available from the agencies.

34. Additional information about sources and methodology is contained in the body of this declaration and in the Sources and Methodology Appendix submitted herewith.<sup>20</sup>

35. I should note that I also took advantage of some of the analyses performed on defendant's lottery data by Dr. Siskin, as detailed later in this declaration.

#### **E. Segregation in New York City**

36. New York City has long been characterized by substantial levels of residential segregation; it continues to be characterized by substantial levels of residential segregation.

37. The table below shows two of the most common segregation indexes with the results for the City from 1980 through the present. I computed all of these indexes; those through

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<sup>19</sup> The Housing Connect data were supplied to plaintiffs' counsel as a "dump" from the Oracle database that is used to manage those who applied for the lottery. The database was an exact copy except that some fields were redacted due to a variety of defendant concerns.

<sup>20</sup> The Sources and Methodology Appendix is separately filed on ECF as Part 2 of my declaration.

2010 were published in a book that I co-authored and co-edited.<sup>21</sup>

<b>Table 1 - Segregation Indexes for New York City, 1980 through 2013-2017 ACS</b>					
	<b>1980</b>	<b>1990</b>	<b>2000</b>	<b>2010</b>	<b>2013-17 ACS</b>
<b>Dissimilarity Black/White</b>	0.83	0.84	0.84	0.82	0.80
<b>Dissimilarity White/Hispanic</b>	0.64	0.66	0.67	0.66	0.64
<b>Dissimilarity Asian/White</b>	0.49	0.48	0.50	0.52	0.52
<b>Isolation White/Black</b>	0.82	0.84	0.85	0.84	0.82
<b>Isolation White/Asian</b>	0.25	0.34	0.44	0.52	0.54
<b>Isolation White/Hispanic</b>	0.62	0.69	0.73	0.73	0.75

38. These indexes get at two different dimensions of segregation. The dissimilarity index measures how evenly a population is spread out in a given area. If the population is evenly distributed, then the measure is zero; if completely segregated, the measure is one. The measure gives the proportion of the population that would need to be moved to get to perfect evenness. These figures have shown very little variation since 1980, with the measures remaining particularly high as between Blacks and Whites.

39. The isolation measures express the average percent of other groups that one would find in a specified region (here census tracts). The isolation measure for Blacks and Hispanics is high, and that for Asians seems to be rising. For all these measures, the contrast category is Whites.

40. New York City's level of segregation by these measures was and remains very

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<sup>21</sup> The indexes for 1980 through 2010 are taken from Andrew A. Beveridge, David Halle, Edward Telles, and Beth Leavenworth Dufault, "Residential Diversity and Division" in *New York and Los Angeles: The Uncertain Future*, David Halle and Andrew A. Beveridge (eds.) (New York: Oxford University Press, 2013, p 316). The most recent set of indexes uses the same program as the earlier indexes, based upon more recent data from the 2013-17 ACS. All these indexes are based upon the Census tract data.

substantial. Particularly notable is the fact the City has apparently made little or no progress (depending on the which two demographic groups are being compared) in reducing segregation levels over time, especially as compared with the results of most other large cities.

41. New York City's levels of segregation translate quite directly into the highly racially concentrated nature of many of the 59 community districts in New York City. Four maps of the distribution of the population groups assessed in this declaration, overlaid with community district boundaries, are attached hereto as Exhibits 5-8. As is apparent from the maps and from the CDs, many of the CDs vary considerably in the extent to which each of the major groups is present. For example, Whites tend to be most concentrated in some areas of Manhattan, Brooklyn, and Staten Island. When compared with the map of the Black population, it is clear how separate the two populations are. The Hispanic population is concentrated in the Bronx and in some parts of Manhattan and Queens. And the Asian population is growing and becoming most concentrated in Queens.

42. Given a segregated city with great variation in the demographic composition of its community districts, one's first hypothesis would be that a community preference system, laid atop these patterns, would cause disparate impacts and permit less integration than would an equal-access lottery system. That hypothesis has been confirmed by the data.

#### **F. Disparate impacts viewed in terms of all lottery entrants**

43. I analyzed 7,245,725 applications for lottery housing across 168 lotteries.

44. In each lottery, at the moment that the application submission period closes, each entrant would have the ability to compete on a level playing field if there were an equal-access lottery system in effect. That is, within each CD typology, each entrant would have the same

chances to compete for all of the units. The community preference policy, however, distorts the odds. The agencies take a single, unified entrant pool and split it into two sub-pools: a very small one made up of insiders (CP beneficiaries) and a very large one made up of outsiders (non-beneficiaries).<sup>22</sup> By the community preference policy's *allocation* rules, developers must award 50 percent of the units to insiders if there are qualified insiders available. In other words, the policy increases the proportion of units that would otherwise go to the small group of insiders and reduces the proportion of units that would otherwise go to the overwhelming large groups of outsiders.

45. By the policy's *sequencing* rules, developers were also required to review insider applications before outsider applications.<sup>23</sup> In fact, when the agencies provide an initial log of lottery applicants to developers, that initial log reflects the agencies' identification of whether the entrant, regardless of how bad that entrant's random lottery that the agencies assign as part of generating the initial log may be, is a CP beneficiary.

46. I first explored the extent to which the odds of being awarded a unit differed as between those applicant households who could compete for units that were ultimately awarded on the basis of the household residing in the community district ("CP beneficiary units") versus those applicant households who could compete for units that were ultimately awarded independent of community district residence (non-beneficiary units).

47. In other words, awarded units had to be categorized as CP beneficiary or non-beneficiary units, and applicant households had to be categorized as CP beneficiary or non-beneficiary households.

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<sup>22</sup> For example, among entrants of all races in the majority-White CD typology, only 2.64 percent are insiders and 97.36 percent are outsiders. *See* further details, below, at 19, n. 29.

<sup>23</sup> That remains the default system. *See* PS, ¶ 24.

48. By using status sheets,<sup>24</sup> I determined the number and percentage of units that defendant awarded as CP beneficiary and non-beneficiary units, respectively. The CP beneficiary units were all units where the applicant household's listing on the status sheet specified that defendant was designating the household as one filling a preference that could only be met by a household residing in the CD.<sup>25</sup> I deducted from this total, however, all units where the household's listing on the status sheet *also* specified that the applicant household was receiving a disability set-aside unit. (This is because the first priorities in the processing of lottery applicants by a project's developer<sup>26</sup> are for units to be awarded to applicant households where a member of the household has: (a) a mobility disability; or (b) a hearing or visual disability. As such, applicant households who were denoted both as insiders and as recipients of a disability set-aside unit on the status sheets can be said to have been awarded the unit independent of – not benefitting from – community preference.) I treated the net number of units as CP beneficiary units.

49. I treated all units awarded by lottery to New York City residents other than CP beneficiary units as non-beneficiary units.

50. The next step was to categorize applicant households. Here again, I treated all outsider households as non-beneficiary households. As a general rule, I treated all applicant households who could compete for units that were ultimately awarded on the basis of the

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<sup>24</sup> Except where otherwise specified, reference to “status sheets” means the status sheet (or HPD’s “Access” equivalent) as reconciled by the reconciliation process.

<sup>25</sup> This includes units where the applicant had to be a New York City Housing Authority (NYCHA) resident living in the CD preference area, or a NYCHA resident living in a particular project in the CD preference area.

<sup>26</sup> Applicant households only come to the attention of the agencies if: (a) the developer submits them for the agency to approve an award of a unit; (b) the applicant household is appealing a determination that had been made at the developer level; or (c) the applicant household files a complaint.

household residing in the community district as beneficiary households.<sup>27</sup> It was, however, necessary to determine how to treat any applicant household who, as shown in Housing Connect: (a) listed a household member as having either a mobility disability or a hearing or visual disability; and also (b) based on the address provided, was determined by defendant to be living in the community district. I looked to the status sheet to find the number of awardee households where defendant deemed an awardee household to receive both disability set-aside and community district preference. (These are non-beneficiary circumstances where it was the fact of the disability and not community district residence that yielded the unit.)

51. I then took all of the circumstances where the status sheet showed that an award was based on CD residence but not on disability status and compared that to the Housing Connect data on those applicant households to see which listed a household member as having either a mobility disability or a hearing or visual disability. (These are CP-beneficiary circumstances where it was the fact of the CD residence and not the disability that yielded the unit.)

52. Of all the awarded units that went to applicant households living in the CD preference area and listing an household member as having either a mobility disability or a hearing or visual disability, I determined the percentage that yielded their unit because of disability status and the percentage that yielded their unit because of community district residence status.

53. Using these percentages, I then randomly assigned *all* of this subset of applicant households as either CP beneficiary households or non-beneficiary households.

54. Within each of the CD typologies, the odds of a CP beneficiary being awarded a

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<sup>27</sup> It is true that CP beneficiary households can, once the requisite number of community preference units have been filled, continue to compete for units open to non-beneficiary households. By not including that additional participation, the analysis errs on the side of understating the odds of a CP beneficiary household getting an apartment (such applicants can actually compete for more apartments than are accounted for in my analyses) and of overstating the odds of a non-beneficiary household (they actually can have some more applicants competing against them – CP beneficiary households – than are accounted for in my analyses).

unit were substantially better than that of a non-beneficiary. This ranged from a multiple-of-benefit of more than six in respect to the plurality Black CD typology to a multiple of benefit of more than 30 in lotteries in the majority-White CD typology.

55. The differences, expressed in chances per 1,000 applicants to get an award (based on the number of units ultimately awarded through the lottery),<sup>28</sup> are shown in Table 2, below.

<b>Table 2 – Chances per 1,000 entrants of an award of a lottery unit, by CD typology</b>			
CD typology	Non-beneficiary entrant chances	CP beneficiary entrant chances	Multiple by which CP beneficiary entrant chances exceed non-beneficiary entrant chances
Majority White	0.502	15.163	30.24
Majority Black	0.754	9.315	12.36
Majority Hispanic	1.073	14.416	13.44
Majority Asian	2.089	16.288	7.80
Plurality White	0.734	14.715	20.04
Plurality Black	0.552	3.621	6.55
Plurality Hispanic	1.330	24.954	18.76

56. In each case, the multiple shows at least a large difference in the chances of a CP beneficiary entrant to get an award as compared with the chances of a non-beneficiary entrant to get an award, in all cases favoring the CP beneficiary applicants. This is the necessary result of the policy's limiting, in each CD typology, the overwhelming percentage of entrants who are outsiders to 50 percent of awards while ensuring that the small fraction of the entrant group who

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<sup>28</sup> The counts of entrant households by typology and CP beneficiary or non-beneficiary status (and associated percentages) are found in Exhibit 9. The analogous counts and percentages for apparently eligible applicants and for awarded units are found in Exhibits 10 and 11, respectively. Chances as reported in Table 2 were derived by comparing all CP beneficiary entrants with all CP beneficiary units that were awarded, and by comparing all non-beneficiary entrants with all non-beneficiary units that were awarded.

are insiders get the same percentage of awards.<sup>29</sup>

57. To be clear as to what causes the difference in odds: it is purely the community preference policy itself. There is simply nothing else at work in terms of the opportunity to compete on a level playing field – the odds have been modified before a single application has been reviewed or a random lottery number assigned.<sup>30</sup>

58. The next question, therefore, is to what extent, within each CD typology, is one demographic group getting the advantages of CP beneficiary status more than others?

59. Before proceeding to answer that question, however, I should explain that all insiders (those whom I also call “CP beneficiaries”) are indeed beneficiaries of the allocation and sequencing rules required by the community preference policy. Under a system *without* community preference, entrants to a lottery would have the same “prior probability” of getting an award, regardless of where they live in relation to where they are applying to live.<sup>31</sup> These are the odds that exist at the moment one enters the lottery. Under the community preference system, by contrast, each insider applicant receives a very substantial boost in odds (the enormity of the advantage depends on community district typology, as shown in Table 2, above). From that moment on under the community preference system, insiders and outsiders are competing on a playing field that is tilted in the favor of insiders.

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<sup>29</sup> The fraction of insiders as a percentage of all entrants for each CD typology is the total for the typology shown in Section 1a of Ex. 9 divided by the total for the typology shown in Section 3a of Ex. 9; those fractions, expressed in percentage terms, are: MW, 2.64%; MB, 6.87%; MH, 5.48%; MA, 11.37%; PW, 5.06%; PB, 11.65%; and PH, 4.50%. The outsiders as a percentage of all entrants for each typology are the balance of the applicants (*e.g.*, 93.13 percent in MB). Averaging across all entrants across all CD typologies, insiders constituted 5.06 percent and outsiders constituted 94.94 percent.

<sup>30</sup> By any of a variety of measures, the differences in odds between insiders and outsiders is statistically significant in each typology. This has never been in dispute.

<sup>31</sup> As noted previously, I treat disability set-aside awards as non-beneficiary awards so long as the receipt of the award came as a matter of disability status and not as a matter of CP beneficiary status.



60. This is true not only for odds of awards, but in terms of the likelihood of being reached and having one's application considered by a developer. The system's allocation and sequencing rules are designed, in the face of an overwhelmingly larger pool of outsiders than insiders, so that a higher proportion of insiders than outsiders are reached and considered by developers. It is only those who are reached by a developer, of course, who have the opportunity to have their qualifications reviewed. It is only those who are reached and are being (or have been) considered by a developer who have the right to update the information they provided on an application or to appeal from an adverse determination by a developer.<sup>32</sup>

61. Because CP beneficiaries are normally reviewed and considered for units before non-beneficiaries, CP beneficiaries are more likely to have a full range of unit types available to them, whereas non-beneficiaries are more likely to be *partially closed out* when reached by a developer (some of the unit types for which they are apparently eligible no longer being available because the supply has already been exhausted) or *fully closed out* when reached by a developer (all of the unit types for which they are apparently eligible no longer being available because the supply has already been exhausted).<sup>33</sup>

62. These disparities have nothing to do with an applicant's qualifications; they result solely from the operation of the policy's sequencing and allocation rules.

63. Turning then to what the data show, within each CD typology, about whether one group is getting the advantages of CP beneficiary status more than other groups, I employed two methods to yield the answer.

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<sup>32</sup> See PS, at 56-58.

<sup>33</sup> See further discussion, below, at 52-54, ¶¶ 181-88.

64. Method 1: Outsider-to-insider-change. Using the data on entrants reported in Exhibit 9, I examined the total number of applicants in a CD typology who were non-beneficiaries (outsiders) and determined the demographic distribution of those outsiders. I also examined the total number of applicants in a CD typology who were CP beneficiaries (insiders) and determined the demographic distribution of those insiders.

65. For each of the four demographic groups being analyzed – Whites, African Americans, Latinos, and Asians – I then calculated the relative change for the group from their share of all outsiders to their share of all insiders. This was done by subtracting the group's share of all outsiders from the group's share of all insiders and then dividing the difference by the group's share of all outsiders.

66. A relative increase in share from outsider to insider (represented by a positive number) represents an advantage being conferred on the group by the community preference policy (for that CD typology). A relative decrease in share from outsider to insider (represented by a negative number) represents a disadvantage being conferred on the group by the community preference policy (for that CD typology).

67. In those cases where benefit accrued to more than one group, the further question was: which group benefited most?

68. By comparing the change in demographic distribution from the outsider group to the insider group, we are able, in one snapshot, to compare directly how the policy as implemented is helping and hurting different demographic groups in each CD typology at the same time.<sup>34</sup> (It is important to underline the fact that these are helps and harms that would not exist absent the policy – the applicants are the same with and without the policy; only the policy causes the the single applicant pool to diverge into two sub-pools, each of which has a different trajectory.)

69. In each CD typology, the group that benefitted most is highlighted in yellow.

<b>Table 3 – Outsider-to-insider-change method: Comparing relative percentage change for each group from share of non-beneficiary entrants to share of CP beneficiary entrants, by CD typology</b>				
CD typology	White	Black	Hispanic	Asian
Majority White	169.29%	-67.91%	23.43%	-28.07%
Majority Black	-55.56%	48.89%	-41.47%	-66.55%
Majority Hispanic	-64.17%	-21.33%	36.99%	-64.74%
Majority Asian	-49.44%	-90.77%	-58.50%	343.88%
Plurality White	35.50%	2.72%	-22.61%	3.53%
Plurality Black	-39.98%	36.36%	-21.95%	-78.24%
Plurality Hispanic	10.06%	-22.25%	17.23%	12.49%

70. To illustrate, in majority-White CD typology lotteries, the increase from the White share of non-beneficiary entrants (9.86157777874644 percent, rounded to 9.86 as presented in Exhibit 9) to the White share of CP beneficiary entrants (26.5565185688481 percent, rounded to 25.56 as presented in Exhibit 9) is an increase of 16.6949407901016 percent, or, in relative terms

<sup>34</sup> I note in this connection that a demographic group's share of the outsider sub-pool of applicants in a CD typology is very similar to that demographic group's share of the total applicants for that CD typology. See Table 9 (comparing Section 2b and Section 3b). In 19 cases, the difference is less than 0.5 percent; in five cases, the difference is less than 1.5 percent; in one case less than 2.0 percent; and in three cases less than 6.0 percent. In all cases, the variance between the share of *insiders* and the group's share of total applicants (comparing Section 1b and Section 3b) was larger.

(16.69, etc. divided by 9.86, etc.), an increase of 169.29279639291, rounded to 169.29 percent as presented in Table 3.<sup>35</sup> In the same CD typology, the drop of the share of Blacks from approximately 34.18 percent of non-beneficiary entrants to a share of approximately 10.97 percent of CP beneficiary entrants represents a loss of approximately -23.21 percent, or, in relative terms (approximately -23.21 divided by 34.18), a decrease of -67.91 percent (the rounded value shown in Table 3).

71. In each CD typology, it was the corresponding majority or plurality group that enjoyed the greatest benefit as reflected by relative size of increase from non-beneficiary entrant share to CP beneficiary entrant share.

72. In each CD typology, the disparities between the most-benefitted demographic group and two or three of the other demographic groups were substantial. Defendant's expert has not challenged the substantiality of the disparities, but were such a challenge to be made belatedly, it would be unavailing. One way that courts have sometimes assessed substantiality of variance is to apply as a rule of thumb the "80 percent test," which takes the result of the demographic group that performs best (or, here, has been conferred the greatest advantage by defendant's policy), and identifies what 80 percent of that result is (for example, the relative advantage for Whites in the majority-White CD typology is 169.29 percent; 80 percent of that is approximately 135.43 percent). A demographic group whose relative advantage is less than approximately 135.43 percent (including, of course, any disadvantage connoted by a negative value) would reflect a substantial disparity pursuant to the 80 percent test.

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<sup>35</sup> There are trivial and inconsequential differences in some values from what I previously reported in reports shared with defendant because, in some instances, a percentage rounded to two decimal places was used in a calculation rather than the exact value (which, as one sees, can stretch on more than 10 decimal places). In this declaration, rounding is not used in any calculation, but only in presentation of a calculated result. Note: no underlying data have changed.

73. In all seven CD typologies, the disparity between the most-advantaged group and each of the other demographic groups is substantial pursuant to the 80 percent test.<sup>36</sup>

74. Method 2: Highest-insider-share. The method just discussed examined how outsiders were distributed by demographic group as opposed to how insiders were distributed by demographic group. That method has the advantage of showing *change* from outsider share to insider share. This next method, by contrast, looks only at insiders. It examines each demographic group and asks, “what share *of the demographic group* is comprised of insiders?” The share of insiders for each demographic group as a percentage of that demographic group’s total entrants for each CD typology is shown in Section 1 of Exhibit 12. A higher share means a greater percentage of the demographic group is taking advantage of CP beneficiary status.

75. I then examined which demographic group had the highest percentage of CP beneficiaries among its members in a CD typology and compared that to the percentages of CP beneficiaries of the other demographic groups in the same CD typology.

76. The comparison shown in Table 4 on the following page takes the demographic group with the highest percentage of CP beneficiaries (highlighted in yellow) and answers the question, “by what relative percentage does that highest group *exceed* the percentage of insiders

<sup>36</sup> The most advantaged demographic group is highlighted in grey. Where a disparity is substantial pursuant to the 80 percent test, it is shown in green.

CD typology	White	Black	Hispanic	Asian
Majority White	100.00%	-40.11%	13.84%	-16.58%
Majority Black	-113.64%	100.00%	-84.82%	-136.11%
Majority Hispanic	-173.48%	-57.66%	100.00%	-175.01%
Majority Asian	-14.38%	-26.40%	-17.01%	100.00%
Plurality White	100.00%	7.65%	-63.70%	9.94%
Plurality Black	-109.95%	100.00%	-60.36%	-215.15%
Plurality Hispanic	58.39%	-129.16%	100.00%	72.53%

in the other demographic groups?”

<b>Table 4 – Highest-insider-share method: Comparing each group’s CP beneficiary applications as a percentage of that group’s total applications against the highest such percentage for any group, by CD typology</b>					
CD typology	Group with highest percentage of its entrants being CP beneficiary entrants	Relative percentage by which highest group exceeds other groups			
		White	Black	Hispanic	Asian
Majority White	White	Highest	688.78%	110.14%	255.69%
Majority Black	Black	211.76%	Highest	139.09%	310.89%
Majority Hispanic	Hispanic	261.62%	68.68%	Highest	267.29%
Majority Asian	Asian	495.75%	3001.75%	617.82%	Highest
Plurality White	White	Highest	29.76%	70.03%	28.80%
Plurality Black	Black	107.82%	Highest	63.33%	446.35%
Plurality Hispanic	Hispanic	6.17%	48.11%	Highest	3.99%

77. The numerical values show, in relative terms, the extent to which the highest insider share of any demographic group in a CD typology – that is, the demographic group with the greatest percentage of its members enjoying the benefits of CP beneficiary status – exceeded the insider share of the other demographic groups in the CD typology.

78. Thus, for example, in the majority-White CD typology, only approximately 0.86 percent of African American applicant households were CP beneficiary applicants, as presented in Section 1 of Exhibit 12. In contrast, approximately 6.81 percent of White applicant households were CP beneficiary applicants, as presented in Section 1 of Exhibit 12. The difference is approximately 5.94 percent. The White percentage is approximately 688.78 percent relatively larger (the difference of approximately 5.94 divided by the lower African American percentage of approximately 0.86 percentage), as presented in Table 4, above.

79. As shown in Table 4, there is in every CD typology an impact to the detriment of

each of the non-dominant groups in the CD population, including extremely strong impact in all of the majority typologies.

80. The same data can be recast to show the extent to which a demographic group is *less* advantaged than the demographic group with the highest percentage of insiders among its members. To use the same example, if one takes the percentage of Blacks who are insiders in the majority-White CD typology (approximately 0.86 percent), and divides it by the White percentage of insiders (approximately 6.81 percent), one sees that the Black percentage is only approximately 12.68 percent of the White percentage. This recast, calculated from the data that underlies the rounded insider percentages presented in Section 1 of Exhibit 12, allows for the application of the 80 percent test (“80 percent test recast”).

81. As shown in the footnote below, the 80 percent test recast confirms that disparities are substantial for all non-dominant groups in six of the seven CD typologies (all except plurality Hispanic). In the plurality-Hispanic CD typology, there is a substantial disparity as between advantaged Hispanics and disadvantaged Blacks.<sup>37</sup>

82. Statistical significance. As with not challenging the fact that there are one or more substantial disparities in each CD typology for entrants, defendant has not disputed the statistical

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<sup>37</sup> The most advantaged demographic group in the CD typology is highlighted in grey. Where a disparity is substantial pursuant to the 80 percent test, it is shown in green. Where it is not, it is shown in yellow.

CD typology	White	Black	Hispanic	Asian
Majority White	100.00%	12.68%	47.59%	28.11%
Majority Black	32.08%	100.00%	41.82%	24.34%
Majority Hispanic	27.65%	59.28%	100.00%	27.23%
Majority Asian	16.79%	3.22%	13.93%	100.00%
Plurality White	100.00%	77.06%	58.81%	77.64%
Plurality Black	48.12%	100.00%	61.23%	18.30%
Plurality Hispanic	94.19%	67.52%	100.00%	96.17%

significance of the disparities. Were there to be a belated challenge, it would be without merit.

83. As I understand it, courts typically treat a standard deviation greater than 2.00 as sufficiently statistically significant, although no standard-deviation test is necessarily required, and standard deviations of less than 2.00 would not necessarily preclude a finding of substantial deviation, depending on the circumstances.

84. To calculate standard deviation, I used tools built into SAS, a statistical software suite.<sup>38</sup>

85. I have reported the standard deviations in Exhibit 13. It shows standard deviations for each of the three categories of analysis (entrant, apparently eligible, and awarded) for each CD typology, for each race, and for both the outsider-to-insider-change method and the highest-insider-share method.

86. Focusing for now on the entrant analyses, there is no case in the majority CD typologies under either method where the standard deviation is not in excess of 2.00; on the contrary, the standard deviation in each case is substantially in excess of 2.00. In the plurality CD typologies, there is only one demographic group in one CD typology – Asians in the plurality White typology (by both methods) – that shows a standard deviation less than 2.00; in all the other cases, the standard deviation is substantially in excess of 2.00.

87. Recapitulation and conclusion. To recap, there are five CD typologies (majority

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<sup>38</sup> The SAS FREQ Procedure was used to compute the exact confidence intervals, the standard errors and ultimately the standard deviations for the proportions and the difference in proportions for the rows and columns of the tables of each of the four demographic groups compared to all others for entrants, apparently eligible, and awarded participants in the housing lotteries for each of the seven typologies. The RISKDIFF option of the TABLES statement in PROC FREQ was used. According to SAS Documentation, “The RISKDIFF option in the TABLES statement provides estimates of risks (binomial proportions) and risk differences for 2X2 tables.” See page 2727 SAS/STAT 13.1 User's Guide (Chapter 40). Using this approach, it was possible to calculate standard deviations for the difference in proportion for each of the tables considering both the row proportions and the column proportions.



White, majority Black, majority Hispanic, majority Asian, and plurality Black) where there is substantial disadvantage to all three of the non-dominant groups: first as shown in Tables 3 and 4 and then as assessed by the 80 percent test for both methods. The disparities are statistically significant in every case under both methods.

88. In the plurality-White CD typology, Blacks and Hispanics show substantial disadvantage: first as shown in Tables 3 and 4 and then as assessed by the 80 percent test pursuant to both of my methods and pursuant to the 80 percent test; there is also a showing that the differences for those groups are statistically significant. For Asians, there is a more mixed result.<sup>39</sup>

89. In the plurality-Hispanic CD typology, the unmixed result is in connection with Black disadvantage: first as shown in Tables 3 and 4 and then as assessed by the 80 percent test for both methods. The disparities are statistically significant for Blacks under both methods.

90. The inescapable conclusion required by the data is that defendant's community preference policy does cause substantial disparate impacts on the basis of race, including at least one in each CD typology; these impacts mean that all entrants are not permitted to compete on a level playing field.

#### **G. Disparate impacts viewed in terms of apparently eligible applicants**

91. Apparently eligible applicants are a subset of entrants. They are the applicants who, on the basis of their self-reported information on their applications, met the income- and household-size requirements for at least one unit-type in a lottery. All entrants begin competing upon applying to a lottery, but it is these apparently eligible applicants who, *if reached by a*

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<sup>39</sup> I have been advised by plaintiffs' counsel that plaintiffs will not be proffering the disparities shown for entrants in the plurality-White CD typology in respect to Asians, nor in the plurality-Hispanic CD typology for Asians or Whites.

*developer*, would be able to continue on further in the competition by documenting their eligibility as opposed to being rejected out of hand.

92. In the same ways that are true for all entrants, the community preference policy prevents apparently eligible applicants who are outsiders from competing on a level playing field with apparently eligible applicants who are insiders.

93. As was true in connection with all entrants, the tilting of the playing field is exclusively the function of the imposition of the sequencing and allocation rules of defendant's community preference policy. The tilt occurs before anything has happened in the lottery.

94. I should also note that there is no procedure in the lottery process that comes to "un-tilt" the playing field. To take the simplest example, it does not matter how many apparently eligible outsiders there are in a particular lottery or in a particular CD typology; it does not matter how stellar their qualifications are documented to be; it does not matter how keen their interest; it does not matter how much they may need an apartment unit being lotteried; and it does not matter how good their random lottery numbers may be. So long as there are insiders available for the 50 percent of community preference units (and regardless of how few insiders may have applied, no matter how bad their lottery numbers, etc.), none of the 50 percent of those units will go to an outsider.

95. The only information available across all applicants in all lotteries that helps determine eligibility are self-reported data: household-size, household-income, subsidy status, and the presence of a "couple" in the household (the last being a factor that adjusts household-size eligibility).<sup>40</sup> The combination of household-size and household-income eligibility, of course, while not the only ultimate factors in eligibility, are principal ones. My definition of apparent

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<sup>40</sup> See PS, ¶ 42.

eligibility for a unit-type was an applicant household who met the household-size and household-income eligibility requirements (the latter either by income or with the help of a subsidy) for that unit type, and my definition of apparent eligibility for a lottery was an applicant household who was apparently eligible for at least one unit type in a lottery.

96. From defendant's data (in this case principally from lottery advertisements), I was able to identify the different unit types and their household-size and household-income requirements for each of the lotteries (there were approximately 900 unit-types).<sup>41</sup>

97. For each applicant household, I compared the self-reported data points (which came from defendant's Housing Connect data) and found which unit types in a lottery, if any, for which the applicant household met the combination of household-size and household-income requirements.

98. These procedures allowed me to create a universe of apparently eligible households.<sup>42</sup> There were 3,115,032 applications that were apparently eligible.<sup>43</sup> Proceeding as I had with my entrant analysis, I was able to create a sub-universe of apparently-eligible CP beneficiary applicant households and a sub-universe of apparently-eligible non-beneficiary applicant households. These data are presented in Exhibit 10.

99. As was the case with all entrants, the odds of getting an award were much better for CP beneficiaries than for non-beneficiaries, as shown by Table 5 on the following page.

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<sup>41</sup> See further discussion in Sections VI to XI in the Sources and Methodology Appendix.

<sup>42</sup> The counts of apparently eligible applicant households by typology and CP beneficiary or non-beneficiary status are found in Exhibit 6 hereto.

<sup>43</sup> Under Dr. Siskin's analysis, the number of apparently eligible applications was 3,118,966. The matching apparently eligible lists matched in more than 99.6 of the cases. As such, the variations are immaterial, as are variations in calculation of race for a very small number of applicants. See PS, ¶ 39.

<b>Table 5 – Chances per 1,000 apparently eligible applications of an award of a lottery unit, by CD typology</b>			
CD typology	Non-beneficiary apparently eligible household chances	CD beneficiary apparently eligible household chances	Multiple by which CD beneficiary apparently eligible household chances exceeds non- beneficiary apparently eligible household chances
Majority White	1.142	29.296	25.66
Majority Black	1.782	20.427	11.46
Majority Hispanic	2.646	34.136	12.90
Majority Asian	4.438	30.843	6.95
Plurality White	1.699	26.281	15.47
Plurality Black	1.167	7.770	6.66
Plurality Hispanic	3.105	56.134	18.08

100. The difference in chances expressed by the multiples shown in the right-most column are large and, beyond dispute, statistically significant.

101. As such, I again undertook to determine relative benefit or detriment to a demographic group, as those effects differ by CD typology because of the localized operation of the community preference policy. I applied the same methods (the outsider-to-insider-change method and the highest-insider-share method) as I did with all entrants.

102. Method 1: Outsider-to-insider-change. I applied this method using the data on apparently eligible applicants that one can find reported in Exhibit 10. The results of the outsider-to-insider change method<sup>44</sup> are shown first on the next page (most-benefitted group highlighted in yellow).

<sup>44</sup> See discussion, above, at 21-22, ¶¶ 64-70, for a full description.

**Table 6 – Outsider-to-insider-change method: Comparing relative percentage change for each group from share of non-beneficiary apparently eligible households to share of CP beneficiary apparently eligible households, by CD typology**

CD typology	White	Black	Hispanic	Asian
Majority White	164.66%	-68.84%	27.01%	-31.14%
Majority Black	-56.54%	47.91%	-38.67%	-65.85%
Majority Hispanic	-66.25%	-15.20%	32.08%	-66.14%
Majority Asian	-59.80%	-90.80%	-66.83%	305.79%
Plurality White	29.72%	10.39%	-29.28%	-10.70%
Plurality Black	-41.29%	37.92%	-22.22%	-79.71%
Plurality Hispanic	21.37%	-23.09%	12.58%	16.97%

103. In six of seven CD typologies, the most benefit from community preference accrues to the dominant demographic groups in the CD typology, and there are substantial detriments suffered by all of the other demographic groups in each typology (all but plurality Hispanic).<sup>45</sup>

104. The substantiality of the disparities has not been disputed; the 80 percent test is confirmatory of my Table 6 for the six at-issue typologies for apparently eligible as shown below.<sup>46</sup>

<sup>45</sup> Plaintiffs' counsel advises that plaintiffs will not be proffering evidence of disparities for apparently eligible applicants in the plurality-Hispanic typology (despite substantial advantage for Hispanics in relation to Blacks); I therefore limit my discussion in this section to the other six CD typologies.

<sup>46</sup> The most advantaged demographic group in a CD typology is highlighted in grey. Where a disparity is substantial pursuant to the 80 percent test, it is shown in green. Where it is not, it is shown in yellow. There is one exception to how demographic groups in a typology are highlighted: where the most-advantaged demographic group in the CD typology is not the largest demographic group in the typology, that largest demographic group, along with the other relatively disadvantaged groups, are all shown in red (even though various substantial disparities may be present).

CD typology	White	Black	Hispanic	Asian
Majority White	100.00%	-41.81%	16.40%	-18.91%
Majority Black	-118.03%	100.00%	-80.72%	-137.45%
Majority Hispanic	-206.50%	-47.37%	100.00%	-206.15%
Majority Asian	-19.56%	-29.69%	-21.85%	100.00%
Plurality White	100.00%	34.97%	-98.54%	-36.01%
Plurality Black	-108.90%	100.00%	-58.60%	-210.22%
Plurality Hispanic	100.00%	-108.05%	58.87%	79.38%

105. Method 2: Highest-insider-share.<sup>47</sup> All of the underlying percentages for the share of each demographic group in each CD typology that consists of insiders are presented in Section 2 of Exhibit 12.

106. As shown below by Table 7, in all of the CD typologies as to which plaintiffs are proffering evidence of substantial disparity (all CD typologies except plurality Hispanic) the group most benefitted under Method 2 is the dominant demographic group of the CD typology and all other demographic groups suffer relative detriment.

<b>Table 7 – Highest-insider-share method: Comparing each group’s CP beneficiary apparently eligible households as a percentage of that group’s total apparently eligible households against the highest such percentage for any group, by CD typology</b>					
CD typology	Group with highest percentage of its apparently eligible households being CP beneficiary apparently eligible households	Relative percentage by which highest group exceeds other groups			
		White	Black	Hispanic	Asian
Majority White	White	Highest	690.98%	99.93%	262.16%
Majority Black	Black	215.04%	Highest	126.30%	298.01%
Majority Hispanic	Hispanic	269.86%	51.64%	Highest	268.67%
Majority Asian	Asian	574.21%	2722.99%	709.25%	Highest
Plurality White	White	Highest	16.07%	76.58%	41.54%
Plurality Black	Black	114.43%	Highest	65.58%	491.76%
Plurality Hispanic	White	Highest	54.58%	7.37%	3.56%

107. As with entrants, this same Section 2 of Exhibit 12 can be repurposed to show the 80 percent test recast (the extent to which a demographic group is *less* advantaged than the demographic group with the highest percentage of insiders among its members).

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<sup>47</sup> The method is described in full, above, at 24-25, ¶¶ 74-78.

108. As shown in the footnote below, the disparities are substantial across six of the CD typologies (all except plurality Hispanic).<sup>48</sup> The exception to the rule – Black disadvantage in the plurality White CD typology – did not meet the letter of the 80 percent test under Method 1.

109. Statistical significance. As with not challenging the fact that there are one or more substantial disparities in each CD typology for apparently eligible applicants, defendant has not disputed the statistical significance of the disparities. Here again, were defendant to mount a belated attack, it would be without merit.

110. Focusing now on those portions of Exhibit 13 that show standard deviations for Methods 1 and 2 for apparently eligible applicants, there is no case in any CD typology under either method where the standard deviation is not in excess of 2.00; on the contrary, the standard deviation in each case is substantially in excess of 2.00.

111. Recapitulation and conclusion. To recap, there are five CD typologies (majority White, majority Black, majority Hispanic, majority Asian, and plurality Black) where there is substantial disadvantage to all three of the non-dominant groups: first as shown in Tables 6 and 7 and then as assessed by the 80 percent test for both methods. The disparities are statistically

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<sup>48</sup> The most advantaged demographic group in a CD typology is highlighted in grey. Where a disparity is substantial pursuant to the 80 percent test, it is shown in green. Where it is not, it is shown in yellow. There is one exception to how demographic groups in a typology are highlighted: where the most-advantaged demographic group in the CD typology is not the largest demographic group in the typology, that largest demographic group, along with the other relatively disadvantaged groups, are all shown in red (even though various substantial disparities may be present).

CD typology	White	Black	Hispanic	Asian
Majority White	100.00%	12.64%	50.02%	27.61%
Majority Black	31.74%	100.00%	44.19%	25.12%
Majority Hispanic	27.04%	65.95%	100.00%	27.12%
Majority Asian	14.83%	3.54%	12.36%	100.00%
Plurality White	100.00%	86.16%	56.63%	70.65%
Plurality Black	46.63%	100.00%	60.39%	16.90%
Plurality Hispanic	100.00%	64.69%	93.14%	96.57%

significant in every case under both methods.

112. In the plurality-White CD typology, Hispanics and Asians show substantial disadvantage: first as shown in Tables 6 and 7 and then as assessed by the 80 percent test as applied to both of my methods; the disparities for those groups are demonstrated to be statistically significant.

113. **It is important at this point to step back for a moment.** What we have seen – both for all entrants and for apparently eligible applicants – is a wide range of substantial race-based disparities in who is allocated the benefits of the policy and who, in relative terms, has those benefits withheld. The disparities exist across nearly all CD typologies (seven-out-of-seven for entrant and six-out-of-seven for apparent). As to the latter, just the apparently eligible applications for lotteries in the majority typologies make up more than 75 percent of all apparently eligible applications. Adding in applications for lotteries in plurality-White and plurality-Black CD typologies, there come to be just under 90 percent of the apparently eligible applications, insiders and outsiders combined, from the six CD typologies excluding plurality Hispanic.<sup>49</sup>

114. Put another way, the substantial disparities that exist are the polar opposite of an isolated phenomenon.

## **H. Disparate impacts viewed in respect to awarded units**

115. What effectively happened in the lottery process is that defendant ran (over and over again with each lottery) a *natural experiment*. It is not as though defendant had additional people coming into a lottery after the deadline for lottery applications was passed. At that moment,

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<sup>49</sup> This is true for entrants, too. For apparently eligible applicants, this is the sum of the totals for these six CD typologies in Section 3a of Ex. 10, divided by the total for all CD typologies in Section 3a of that exhibit). For entrants, it is the same procedure in respect to Ex. 9.



all the applications were in. All the characteristics of all the participants were already in place – their household income, their household size, everything about them that would be evaluated. Even more intangible things – why someone had decided to apply, how serious they were about the process – were already in place.<sup>50</sup>

116. The natural experiment was for defendant to take a fixed group and see what happens when they are treated differently by community preference policy rules.

117. Defendant could have had one result for the 50 percent of units currently subject to preference by allowing everyone to participate equally; it has had a different result by limiting the competition for that 50 percent of units to CB beneficiaries.

118. Outsiders act both as a good proxy for all applicants because the demographic composition of outsiders is so close to that of all applicants,<sup>51</sup> and because comparing insiders and outsiders directly shows how different the paths of the two groups distinguished by defendant are in their influence – whether in their contrasting influence on the 50 percent of units subject to the preference or any other preference percentage.

119. In terms of awardees, we were able to use the “status sheets” or their equivalent document as maintained by the agencies to see exactly which types of awards (community preference, disability mobility, no preference, etc.) were actually dispensed. There were, in all,

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<sup>50</sup> It is true that, for outsiders, there are discouraging parts of the lottery process given the allocation and sequencing rules and their consequences; for insiders, by contrast, there are encouraging parts of the lottery process given the allocation and sequencing rules and their consequences. For our purposes, however, that simply means that it is necessary to bear in mind that the results do not take into account any outsider-discouragement or insider-encouragement effect.

<sup>51</sup> For apparently eligible applicants, for example, in eight comparisons across the four majority CD typologies – *e.g.*, Whites in White majority and Blacks in Hispanic majority – the difference between the racial group’s share of the non-beneficiary apparently eligible applicants and all apparently eligible applicants was less than 0.5 percent; in five others, the difference is less than 1.5 percent; and in the remaining 3, all in the Asian majority typology, the difference ran from under 4 percent to under 7 percent). *See* Ex. 10, comparing Section 2b with Section 3b.

10,245 awards that Dr. Siskin and I each studied. The distribution of the awards within each CD typology by insider, outsider, and total, and then by demographic group is found in Exhibit 11.

120. I proceed with the now-familiar methods of assessing difference, but, in this case, we also have the confirmatory evidence provided by a simulation of the lottery run 1,000 times with community preference in effect.

121. Method 1: Outsider-to-insider-change. As with the other analyses, the group benefitting most is highlighted in yellow in Table 8, below.

<b>Table 8 – Outsider-to-insider-change method: Comparing relative percentage change for each group from share of non-beneficiary actual awardees to share of CP beneficiary actual awardees, by CD typology</b>				
CD typology	White	Black	Hispanic	Asian
Majority White	88.37%	-65.94%	16.77%	-0.98%
Majority Black	-45.19%	21.39%	-25.45%	-45.19%
Majority Hispanic	-60.93%	-11.59%	17.76%	-12.16%
Majority Asian	-100.00%	-100.00%	-65.22%	157.14%
Plurality White	0.82%	41.74%	-3.67%	-37.54%
Plurality Black	15.75%	13.94%	-12.03%	-22.83%
Plurality Hispanic	25.84%	-40.15%	10.79%	13.06%

122. In each of the four majority CD typologies, the dominant demographic group once again secured the most benefit from the community preference policy, and there were one or more other groups that suffered significant detriment.<sup>52</sup> In the majority-White CD typology in this case, a detriment of approximately 65.94 percent for Blacks was paired with a benefit of approximately 88.34 percent for Whites.

<sup>52</sup> I have been advised by plaintiffs' counsel that plaintiffs will not be proffering evidence of disparities for awardees in plurality typologies. As such, the discussion in the balance of this awardee section will revolve exclusively around the majority CD typologies.

123. The substantiality of these majority CD typologies is evident on the face of Table 8, and Dr. Siskin has not challenged that fact.

124. The results of the 80 percent test, presented below, confirm their substantiality in all cases pursuant to Method 1.<sup>53</sup>

125. Further confirmation of substantial disparate impact comes from the simulations of the lottery process that Dr. Siskin ran in connection with disparate impact. One thing he did was to run the simulation 1,000 times with the community preference policy in effect. In each run of the simulation, the population for each of the 168 lotteries was redrawn and randomly reordered. According to Dr. Siskin, these preferences were implemented pursuant to lottery rules.

126. Using the data that he generated (which he did not report with the results disaggregated by CD typology or by CP beneficiary or non-beneficiary status), I created one of my Method 1 tables, which does disaggregate the data in those ways. The underlying data are shown in Exhibit 14; the Method 1 table derived from those data is shown in Table 9 on the next page.

127. As was the case with the actual awardees, the simulated awards results show that

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<sup>53</sup> The most advantaged demographic group in a CD typology is highlighted in grey. Where a disparity is substantial pursuant to the 80 percent test, it is shown in green. Where it is not, it is shown in yellow. There is one exception to how demographic groups in a typology are highlighted: where the most-advantaged demographic group in the CD typology is not the largest demographic group in the typology, that largest demographic group, along with the other relatively disadvantaged groups, are all shown in red (even though various substantial disparities may be present).

CD typology	White	Black	Hispanic	Asian
Majority White	100.00%	-74.62%	18.98%	-1.11%
Majority Black	-211.28%	100.00%	-119.01%	-211.28%
Majority Hispanic	-343.08%	-65.26%	100.00%	-68.45%
Majority Asian	-63.64%	-63.64%	-41.50%	100.00%
Plurality White	1.96%	100.00%	-8.80%	-89.95%
Plurality Black	100.00%	88.52%	-76.40%	-145.00%
Plurality Hispanic	100.00%	-155.33%	41.75%	50.53%

the dominant group secured the most benefit from the community preference policy in all majority typologies, and these benefits were paired with substantial detriment to the other demographic groups. In the majority-White CD typology in the simulations, for example, the detriment to Blacks, about 61 percent, is paired with a benefit of about 146 percent for Whites.

<b>Table 9 – Outsider-to-insider-change method applied to defendant’s 1,000 simulations of each of 168 lotteries with community preference in effect, by CD typology</b>				
<b>CD Typology</b>	<b>White</b>	<b>Black</b>	<b>Hispanic</b>	<b>Asian</b>
Majority White	145.58%	-61.30%	5.82%	-12.39%
Majority Black	-64.32%	44.56%	-33.41%	-68.49%
Majority Hispanic	-72.62%	-7.58%	23.91%	-72.52%
Majority Asian	-62.13%	-89.15%	-63.60%	303.45%
Plurality White	-0.38%	23.07%	-16.26%	-19.76%
Plurality Black	-23.32%	42.78%	-32.17%	-76.37%
Plurality Hispanic	10.12%	-31.49%	9.91%	51.36%

128. The 80 percent test, as applied to the simulation’s Method 1 results, shows substantial disparities in *all* the majority CD typologies as between the dominant demographic group and each of the other demographic groups.<sup>54</sup>

<sup>54</sup> This is also true for the plurality Black typology, but as indicated, plaintiffs are not proffering evidence of substantial disparities in connection with the plurality CD typologies and awardees. The most advantaged demographic group in a CD typology is highlighted in grey. Where a disparity is substantial pursuant to the 80 percent test, it is shown in green. Where it is not, it is shown in yellow. There is one exception to how demographic groups in a typology are highlighted: where the most-advantaged demographic group in the CD typology is not the largest demographic group in the typology, that largest demographic group, along with the other relatively disadvantaged groups, are all shown in red (even though various substantial disparities may be present).

CD typology	White	Black	Hispanic	Asian
Majority White	100.00%	-42.11%	4.00%	-8.51%
Majority Black	-144.34%	100.00%	-74.97%	-153.70%
Majority Hispanic	-303.75%	-31.72%	100.00%	-303.33%
Majority Asian	-20.48%	-29.38%	-20.96%	100.00%
Plurality White	-1.63%	100.00%	-70.49%	-85.66%
Plurality Black	-54.52%	100.00%	-75.20%	-178.52%
Plurality Hispanic	19.71%	-61.30%	19.29%	100.00%

129. Method 2: Highest-insider-share. The underlying percentages showing the share of each demographic group in each CD typology that consists of insiders are presented in Exhibit 12. Section 3 of that exhibit shows the insider-percentage for each demographic group for actual awardees; Section 4 of that exhibit shows the same for Dr. Siskin's simulation.

130. As shown on the below in Table 10 (referencing actual awardees), in all of the majority CD typologies<sup>55</sup> the demographic group most benefitted under Method 2 is the dominant demographic group of the CD typology and all other demographic groups suffer relative detriment.

<b>Table 10 – Highest-insider-share method: Comparing each group's CP beneficiary actual awardees as a percentage of that group's total awardees against the highest such percentage for any group, by CD typology</b>					
CD typology	Group with highest percentage of its awardees being CP beneficiary awardees	Relative percentage by which highest group exceeds other groups			
		White	Black	Hispanic	Asian
Majority White	White	Highest	178.08%	24.10%	35.46%
Majority Black	Black	57.64%	Highest	29.82%	57.64%
Majority Hispanic	Hispanic	105.03%	17.31%	Highest	17.76%
Majority Asian	Asian	No Beneficiary Awards	No Beneficiary Awards	179.00%	Highest
Plurality White	Black	16.15%	Highest	18.76%	50.51%
Plurality Black	White	Highest	0.79%	15.79%	25.00%
Plurality Hispanic	White	Highest	52.18%	6.43%	5.35%

<sup>55</sup> The majority typologies account, in the aggregate, for slightly more than 70 percent of the total awarded units, both beneficiary and non-beneficiary. (This is the sum of the totals for each majority CD typology in Section 3a of Ex. 11 divided by the total for all CD typologies in Section 3a of that exhibit).

131. The first section of the footnote below shows the results of the 80 percent test recast as it pertains to actual awards.<sup>56</sup> I did not prepare an equivalent to Table 10 for the simulated results under Method 2, but report the results of the 80 percent test recast on the results of simulated awards in the second section of that same footnote.

132. Among the disparities in the majority CD typologies under Method 2:

- a. Every majority CD typology has at least one demographic group that is less than 80 percent of the dominant demographic group, both in actual awards and in simulated awards.
- b. The majority-Asian and majority-Black CD typologies show that all three non-

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<sup>56</sup> The most advantaged demographic group in a CD typology is highlighted in grey. Where a disparity is substantial pursuant to the 80 percent test, it is shown in green. Where it is not, it is shown in yellow. There is one exception to how demographic groups in a typology are highlighted: where the most-advantaged demographic group in the CD typology is not the largest demographic group in the typology, that largest demographic group, along with the other relatively disadvantaged groups, are all shown in red (even though various substantial disparities may be present).

Actual awards:

CD typology	White	Black	Hispanic	Asian
Majority White	100.00%	35.96%	80.58%	73.82%
Majority Black	63.44%	100.00%	77.03%	63.44%
Majority Hispanic	48.77%	85.24%	100.00%	84.92%
Majority Asian	0.00%	0.00%	35.84%	100.00%
Plurality White	86.09%	100.00%	84.20%	66.44%
Plurality Black	100.00%	99.21%	86.36%	80.00%
Plurality Hispanic	100.00%	65.71%	93.96%	94.92%

Simulated awards:

CD typology	White	Black	Hispanic	Asian
Majority White	100.00%	39.23%	72.32%	65.68%
Majority Black	44.33%	100.00%	67.49%	40.39%
Majority Hispanic	38.73%	86.74%	100.00%	38.84%
Majority Asian	33.46%	11.83%	32.50%	100.00%
Plurality White	90.43%	100.00%	82.56%	80.64%
Plurality Black	73.68%	100.00%	68.59%	32.36%
Plurality Hispanic	86.95%	67.36%	86.87%	100.00%

dominant demographic groups are substantially disadvantaged compared to the dominant group both in actual awards and in simulated awards.

c. The majority-White CD typology only varies from majority Asian and majority Black insofar as actual awards for Hispanics under Method 2 are at 80.58 percent (the simulated awards, by contrast – run 1,000 times – have Hispanics in the majority-White CD typology at only 72.32 percent of the White result for Method 2).

d. In the majority-Hispanic CD typology, the most consistent result is shown for the disadvantage of Whites, which is substantial both in actual awards and in simulated awards for Method 2.

133. Statistical significance. Referring once again to Exhibit 13 (this time the “actual awardees” section), the statistical significance of the actual results are more than 2.00 standard deviations in all cases except for Asians in both majority-White and majority-Hispanic typologies, and Whites in the majority-Asian CD typology. The statistical significance of 1,000 simulations generating 10,245,000 results is, in practical terms, self-evident for all cases.

134. Recapitulation and conclusion. To recap in terms of awardees, here are the demographic groups that show substantial disadvantage under both methods, both for actual awards and for the simulated results, and are statistically significant not only for the simulated results but for actual awards as well:

<u>CD typology</u>	<u>Substantially disadvantaged demographic group</u>
Majority White:	Blacks
Majority Black:	Whites, Hispanics, and Asians
Majority Hispanic:	Whites
Majority Asian:	Blacks, Hispanics

135. In addition, there is substantial disadvantage for Hispanics in the majority-White CD typology when one considers: (a) substantial disadvantage per Method 1 as to both actual and simulated awards; (b) statistical significance for both Method 1 and 2; and (c) with Method 2, 80 percent tests came in at 80.58 percent for actual awardees and 72.32 percent for simulated awardees.

136. In addition, there is substantial disadvantage for Whites in the majority Asian CD typology, with all the indicators pointing in the same direction (substantial disadvantage per Methods 1 and 2 as to both actual and simulated awardees), and the lack of statistical significance for actual awardees under Method 1 counterbalanced by the statistical significance that is present pursuant to Method 2 (approximately 12 standard deviations) and in respect to the simulated awardees.

137. Regardless of the Court's view as to the opinions I express in paragraphs 135 and 136, the stark facts of paragraph 134 remain: substantial detriments and statistical significance by both measures and for both actual and simulated awardees, occurring eight times across the four majority typologies, at least once in each typology.

138. There are meaningful (substantial) disparate impacts for awardees.

### **I. Perpetuation of segregation**

139. In view of the design of defendant's community preference policy, the allocation policy of which operates to filter down substantially the percentage of moves that can be made by outsiders to a community district, the policy could not help but to perpetuate segregation more (permit fewer racially integrative moves) than would be the case without the policy.

140. I have demonstrated that the population of New York City is segregated at the



census tract level and is segregated (concentrated by race) at the community district level, too (*see* Section E, above). This proposition is not in dispute.

141. Under these conditions, while it is certainly possible for a move by a member of a racial group within a CD where that racial group is dominant to be integrative, it is *more likely* that a move by a member of a racial group to a CD where that racial group is not dominant will be integrative. Put the other way, if you start with a segregated CD (a CD with a concentration of a particular demographic group) and reserve 50 percent of the units for those already living in the CD, you will predictably have more segregation (less integration) than if those units were open to all comers.

142. This result is also suggested by what we know from the data and has already been discussed in Sections F, G, and H, above, regarding disparate impacts:

a. the pattern of the share of *insiders* who are members of the *dominant* demographic group being *larger* than the share of *outsiders* who are members of the dominant demographic group; and,

b. conversely, the pattern of the share of *outsiders* who are members of *non-dominant* demographic groups being *larger*, most of the time, than the share of *insiders* who are members of non-dominant demographic groups.

143. Apparently eligible outsiders, looking across CD typologies, account for approximately 94.5 percent of all apparently eligible outsiders.<sup>57</sup> There is no dispute that the operation of the community preference policy preferring insiders for 50 percent of the units operates to reduce that outsider share substantially when it comes to awardees.

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<sup>57</sup> See Ex. 10. Comparing the total number of all apparently eligible non-beneficiaries in each CD typology (Section 2a) with the total number of all apparently eligible applicants regardless of beneficiary status (Section 3a), the non-beneficiary percentages in each CD typology are approximately as follows: MW, 96.90%; MB, 92.63%; MH, 94.31%; MA, 87.42%; PW, 93.55%; PB, 88.51%; and PH, 95.34%.

144. If indeed it is the case that a greater percentage of outsider moves are integrative on net than the percentage of insider moves on net, then a policy to filter down the availability of those outsider moves, by definition, makes fewer net-integrative moves possible than would be the case without the policy.

145. Awardee data, apparently eligible data, and the simulation run by Dr. Siskin all confirm that outsider moves are more net-integrative a greater percentage of the time.

146. Dr. Siskin examined 145 of the 168 lotteries where the affordable housing to be lotteried off was contained in a single census district. I, in turn did the same.

147. What he did in all instances was to geocode the address of the lottery project. He also geocoded the address of the applicant where that was identifiable (a very large proportion of the cases). He proceeded to assess moves as “integrative,” “segregative,” or as having “no effect” on segregation, as those moves would be understood in the context of the dissimilarity measure.<sup>58</sup>

148. I have accepted for this declaration the data characterizing moves that corresponds to Dr. Siskin’s report of those moves in his December 13, 2019 amended opposition report.<sup>59</sup>

149. Under this approach, there are six pairings of racial groupings that are each looked at separately to look at the impact of a move as it pertains to the relationship of the pairing: Whites in relation to Black (“W v AA”); Whites in relation to Hispanics (“W v H”); Whites in relation to

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<sup>58</sup> With the exception of the fact, as explained below in paragraph 151 and 155, of there being a subset of the moves characterized by Dr. Siskin as “no effect” which, definitionally, could not be “integrative” or “segregative” because those moves involve a demographic group not part of the comparison being made. Such moves, in the context of the dissimilarity measure, are properly categorized as “not in group” as opposed to “no effect.”

<sup>59</sup> Dr. Siskin corrected the data that he had originally reported because of a fundamental error I had identified in his characterizations of moves as “integrative” or “segregative.” Again, please note the caveat that some “no effect” moves still had to be reclassified as “not in group.”

Asians (“W v A”); Blacks in relation to Hispanics (“AA v H”); Blacks in relation to Asians (“AA v A”); and Hispanics in relation to Asians (“H v A”).

150. Since the measure pertains only to the relationship between a single pair of demographic groups, the only way to see, for example, whether a move is integrating, segregating, or has no effect in respect to Whites in relation to Blacks is to limit one’s lens to the moves *made* by Whites and Blacks. Moves made by Hispanics and Asians could not have any effect or relevance to the Black comparison. It is absolutely basic to the social science of measuring segregation, and, more specifically, to the application of the dissimilarity measure, that two-group pairs are assessed entirely separately, one pairing at a time.

151. One of the things that Dr. Siskin did was to look at the moves made by actual awardees. An excerpt of his table that includes the number of integrative and segregative moves for each of the six demographic pairings, as well as the net number of integrative moves, is presented in Exhibit 15.

152. I do not disagree with the net number of integrative moves and the net number of segregative moves he reports for any of the six pairings.

153. The Court will notice, however, that he did not report results disaggregated by whether the awardee was a CP beneficiary or a non-beneficiary. I have disaggregated the results in that way.

154. Dr. Siskin also failed to disaggregate and put aside from “no effect” those “not in group” (*e.g.*, Hispanics and Asians in the White-Black comparison). I have done so in order to make the “no effect” count a true count of those moves *made by Whites and Blacks* that were neither integrative nor segregative. I followed the equivalent procedure with all of the demographic groups.

155. My table of disaggregated results for awardees is presented as Exhibit 16, showing counts on the first page and percentages and relative difference on the second.

156. In each demographic pairing, and separately for outsiders and insiders, the number of integrating moves is subtracted from the number of segregating moves. Where the number of integrating moves is greater, the result is a negative number. A convenient way to think about this is that when the result is a negative number that means less segregation and more integration. The more negative the number, the greater the net-integrative effect.

157. In each demographic pairing, I then calculated the net-integrative effect of outsider moves as a percentage of all outsider moves (“outsider net-integration percentage”) and the net-integrative effect of insider moves as a percentage of all insiders moves (“insider net-integration percentage”).

158. Comparing outsider net-integration percentage with insider net-integration percentage is particularly useful because one is able to compare the influence each type of move has, and thus reach a conclusion about whether ending the practice of suppressing outsider moves (abandoning the community preference policy) would allow more integration than has been the case, and *will allow more integration in the future as more lottery projects are developed*.

159. Before getting into the details, I should note that, in most cases that I have worked on involving perpetuation of segregation, the analysis did not involve an examination of all demographic pairings – it was enough for there to be perpetuation found in one of the pairings examined (usually W v AA or W v H).

160. Here, the greater integrating influence of outsider moves is present in each of the six demographic pairings, and is present in terms of actual awards (which I shall address first); in what the results would have been if all the moves sought by apparently eligible applications for

the lotteries examined had taken place; and in Dr. Siskin's 1,000 runs of a lottery simulation where community preference was in effect.

161. I summarize the results of my analysis of actual awardees for perpetuation of segregation purposes, the full results of which are presented in Exhibit 16, and summarized in Table 11, below.

<b>Table 11 – Net-integrative outsider moves vs. net-integrative insider moves (actual awardees)</b>			
<b>Demographic Pairing</b>	<b>Net integrative outsider moves (count)</b>	<b>Net integrative insider moves (count)</b>	<b>Insider net-integration percentage as percentage of outsider net-integration percentage (the 80 percent rule)</b>
W v AA	-299	-84	32.71
W v H	-114	-57	45.87
W v A	-285	-179	65.98
AA v H	-399	-42	12.84
AA v A	-316	-63	25.43
H v A	-229	-182	89.52

162. The results all point in the same direction: a greater net-integrative effect both in raw numbers and in net-integration percentage for outsider moves. Five of the six pairings (all but H v A) have very substantial disparities (by analogy to the 80 percent test, the rightmost column in Table 11, those five pairings are easily substantial).

163. Even before looking at any other data, two things are clear: first, outsider moves are more integrative; and, second, the more outsiders are permitted to compete for all units (that is, the less filtering a community preference policy imposes), the more integration there will be.

164. This fact is illuminated by another lens that Dr. Siskin used: examining apparently eligible applicants. I disaggregated his non-scaled data and proceeded in the same way previously described.

165. My results are presented in full in Exhibit 17 and summarized below in Table 12:

<b>Table 12 – Net-integrative outsider moves vs. net-integrative insider moves sought by apparently eligible applicants</b>			
Demographic Pairing	Net integrative outsider moves sought (count)	Net integrative insider moves sought (count)	Insider net-integration percentage as percentage of outsider net-integration percentage (the 80 percent rule)
W v AA	-358,187	-5,609	29.51
W v H	-64,058	-598	17.03
W v A	-301,581	-8,041	49.23
AA v H	-358,681	-2,033	11.10
AA v A	-349,939	-2,273	13.22
H v A	-258,359	-7,941	61.24

166. The examination of apparently eligible applications shows vast disparities between the outsider net-integration percentage and the insider net-integration percentage, with the insider net-integration percentage being much less in each and all of the six typologies.

167. This is not just a confirmatory result; it also provides a glimpse into what happens when the percentage of outsiders is *not* constrained by the community preference policy. These are vast numbers of apparently eligible applicants, and it cannot be denied that the number of net-integrative outsider moves completely overwhelms the number net-integrative insider moves (just as it cannot and has not been denied that the community preference policy does act as a constraint on the percentage of outsiders who are permitted to obtain awards).

168. For example, if one adds together the net integrative moves for both insiders and outsiders in the W v AA pairing, net-integrative outsider moves constitute 98.4 percent of all net-integrative moves. Doing the same for the AA v H pairing, net-integrative outsider moves constitute 99.4 percent of all net-integrative moves.

169. Again, the greater the mix of outsiders in the awardee pool, the more integration (*i.e.*, the less perpetuation of segregation) there will be.

170. The apparently eligible analysis shows that the community preference policy not

only has, in fact, permitted less integration than would otherwise be the case, it shows that this result is *predictable* over a pool of apparently eligible applicants that is more than two-million strong.

171. Yet another way to examine predictability is to analyze a simulation of the lottery, which Dr. Siskin ran 1,000 times with the community preference policy in effect. As with the other analyses, I do not dispute his overall numbers, but I do disaggregate them in the ways previously described so that neither the influence of outsider moves versus that of insider moves is disguised, and so that “no effect” is not polluted by those not in the pairing. The results of my disaggregation are presented in Exhibit 18.<sup>60</sup> The summarized results are found in Table 13.

<b>Table 13 – Cumulative net-integrative outsider moves vs. net-integrative insider moves (defendant’s 1,000 runs of simulation with community preference in effect)</b>			
Demographic Pairing	Net integrative outsider moves (count)	Net integrative insider moves (count)	Insider net-integration percentage as percentage of outsider net-integration percentage (the 80 percent rule)
W v AA	-425,171	-125,801	29.61
W v H	-178,714	-68,995	33.03
W v A	-349,875	-215,080	57.90
AA v H	-530,630	-68,976	13.63
AA v A	-443,787	-92,294	22.60
H v A	-323,330	-197,830	61.76

172. Even though the simulation (similar to the actual awards) constrains the percentage of outsider that can get awards, the influence of outsider simulated awards as compared with the influence of insider simulated awards is clear. Insider net-integrative moves as a percentage of all outsider moves in relative and absolute terms are substantially less than outsider net-integrative moves.

173. This occurs in all six pairings. Analogizing to the 80 percent rule (*see* the rightmost column of Table 13), insiders in the AA v H pairing are the lowest in relative terms at 13.63

<sup>60</sup> Here, I also specify “race refused,” which I do not include in the totals of any of the pairings.

percent; insiders in the H v A pairing are the highest in relative terms, at only 61.76 percent.

174. The only thing to add is a word about statistical significance. Certainly, the 1,000 runs of the simulation are statistically significant. As for actual awardees and the apparently eligible analyses, I used the same method as I did when computing standard deviation in connection with the disparate impact results.<sup>61</sup>

175. For actual awardees, the five pairings with substantial disparities all had statistically significant differences between the higher outsider net-integration percentage and the lower insider net-integration percentage. The measure of standard deviation was significantly greater than 2.00 in all five cases.<sup>62</sup>

176. For apparently eligible applicants seeking to move, all six pairings (all of which had substantial disparities) had statistically significant differences between the higher outsider net-integration percentage and the lower insider net-integration percentage. The measure of standard deviation was significantly greater than 2.00 in all five cases.<sup>63</sup>

177. In a city as large as New York (with more than 3.1 million occupied residential units),<sup>64</sup> and as segregated as New York, it is sadly the case that there will be some significant level of residential segregation deep into the future. People live where they live. The only question in terms of perpetuation of segregation has to do with the choice defendant has had and continues to have: is the process of desegregation more effectively *begun* with or without a community

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<sup>61</sup> See description, above, at 27, n.38.

<sup>62</sup> W v AA = 10.54; W v H = 4.67; W v A = 5.15; AA v H = 17.02; and AA v A = 12.36. The sixth pairing, H v A, was equal to 1.18.

<sup>63</sup> W v AA = 183.00; W v H = 98.79; W v A = 108.00; AA v HA = 339.20; AA v A = 275.6; and H v A = 57.81.

<sup>64</sup> According to the most recent New York City Housing and Vacancy Survey results from 2017. See PS, ¶ 33.



preference policy in effect? It is clear beyond any doubt that the policy's filtering down of the percentage of outsiders who can be awarded units operates to permit less integration than would otherwise be the case. That is the definition of perpetuation of segregation.

**J. Other benefits of CP beneficiary status; corresponding detriments of non-beneficiaries**

178. Much earlier in this declaration, I adverted to the fact that better odds were not the only way that CP beneficiaries were a distinctly favored group in relation to non-beneficiaries.

179. Given the vast difference in the size of the respective CP-beneficiary and non-beneficiary pools and the much smaller difference between the number of CP-beneficiary units and non-beneficiary units in most lotteries, it is typically and predictably the case that a materially greater percentage of CP-beneficiary entrants will be reached and evaluated for eligibility by a developer than the percentage of non-beneficiaries. The same is true for apparently eligible applicants: just as outsiders are the overwhelming percentage of all applicants, apparently eligible outsider applicants are the overwhelming percentage of all apparently eligible applicants.

180. It is only by being reached and considered by a developer that one can have the opportunity to have one's qualifications evaluated, have the opportunity to update those qualifications from the information provided in the application, have the opportunity to document qualifications if one is an apparently eligible applicant, and have the opportunity to appeal an adverse determination by the developer. So typically having a greater proportion of one's defendant-assigned grouping reached and considered (the circumstance for CP beneficiaries) is better than having a smaller proportion of one's defendant-assigned grouping reached (the circumstance for non-beneficiaries).

181. It is also the case that, at the time of developer review, outsiders are more apt to be

either partially closed out of one or more of the unit types for which they are eligible or fully closed out of all of the unit types for which they are eligible. This is not a complicated process, and the result is entirely predictable.

182. In each lottery, there exists a finite supply of different unit types. Both the number of unit types and their supply varies by lottery. For example, there may be one-bedrooms available at only one rent – that is, at one level of affordability – there may be one-bedrooms available at three different rents – that is, at three different levels of affordability. There may be 20 one-bedrooms available or there may be only five.

183. The key point, regardless of lottery, is that, as the lottery proceeds, the supply begins to be diminished. As I understand it, there is no limit on what percentage of a particular unit type is permitted to be allocated to a preference group, including CP beneficiaries.<sup>65</sup> The mechanism is that any available unit can be taken on a first-come, first-served basis. Eventually, all of the supply of a unit type is exhausted. The supply is more apt to be exhausted later in the lottery (where non-beneficiary applicants are sequenced) than early in the lottery (where CP beneficiary applicants are sequenced).

184. To illustrate the point, of the approximately 900 unit-types for which there were at least one unit awarded to an applicant household in a lottery, I examined each unit type that had both of the following characteristics:

- a. At least *five* applicant households listed on defendant's status sheets as having received community preference but not having received a disability set-aside;  
and
- b. *Zero* applicant households listed on defendant's status sheets to outsiders who

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<sup>65</sup> See PS, ¶ 28.

were not the recipient of a disability set-aside.

185. This subset of unit types, the projects they were associated with, their AMI bands, and the number of CP awards (other than disability) in each unit type are listed in Exhibit 19, hereto.

186. As the exhibit shows, there were 61 such unit types across 36 lotteries encompassing 565 units. 86.9 percent of the unit types, and 89.0 percent of the units were unit types at the 60 percent AMI level or below.

187. In other words, there are a substantial number of unit types where households who are outsiders not eligible for any preference or set-aside (whose processing is sequenced after CP beneficiary) are all closed out, even though the unit type might have been the only one for which they were eligible. This is the direct result of the rules governing the allocation of units based upon community preference.

188. But the illustration is only the tip of the iceberg. Disadvantage to an outsider does not only occur when *all* outsiders are excluded. Disadvantage also occurs when the sequencing rules result, as they must under the policy, in more outsiders than insiders predictably being confronted with one or more no-longer-available unit types. This can happen where those unit-type close-outs represent *some* of the unit types for which the outsiders were apparently eligible (being partially closed-out) and where those unit-type close-outs represent *all* the unit types for which the outsiders were apparently eligible (being fully closed-out).

#### **K. Rent burden**

189. Housing Connect provides each applicant the ability to report: (a) household

income data at the time of an application;<sup>66</sup> (b) total rent at the location from where the applicant household is applying; and (c) the applicant household's contribution to that total rent (an amount that may only be a portion of the full rent).

190. I calculated rent as a percentage of income based on total reported rent as well as based on contribution to total rent. Within each type of calculation, I distinguished between those applicant households claiming a subsidy and those who did not. Within "subsidy claimed" and "no subsidy claimed," I distinguished between CP beneficiary applications and non-beneficiary applications. The applications able to be included were those which reported both a positive income value and a positive dollar value for the relevant rental amount. There were a significant number where one or both values were missing. I also removed outliers.<sup>67</sup>

191. Nonetheless, this left me with slightly fewer than 5 million observations as to rent as a percentage of income based on total rent, and slightly more than 5 million observations as to rent as a percentage of income based on contribution to total rent.

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<sup>66</sup> Calculated as described in the Sources and Methodology appendix.

<sup>67</sup> About one-fifth of all applications are missing data regarding the question of total rent; a similar percentage are missing data regarding the question of contribution to total rent. About three percent of applications were missing data with respect to income. All such cases were considered "missing," as were those for which zero was reported or recorded for the rent, contribution, and/or income values. Beyond this there were some rents as a percentage of income that were very high (above 90 percent) and some very low (below 5 percent). These were considered outliers and were also eliminated from analysis.

192. The results of the analysis are shown in Table 14 below.

<b>Table 14: Rent Burden per Available Housing Connect Data</b>								
	<b>Rent as Percentage of Income Based on Total Rent</b>				<b>Rent as Percentage of Income Based on Contribution to Total Rent</b>			
	<b>No Subsidy Claimed</b>		<b>Subsidy Claimed</b>		<b>No Subsidy Claimed</b>		<b>Subsidy Claimed</b>	
	<b>No CP</b>	<b>CP</b>	<b>No CP</b>	<b>CP</b>	<b>No CP</b>	<b>CP</b>	<b>No CP</b>	<b>CP</b>
<b>N Obs</b>	4,392,513	225,125	301,950	17,808	4,469,990	230,162	341,404	20,072
<b>Mean</b>	37.93%	36.91%	44.92%	43.94%	27.85%	27.35%	25.95%	25.72%
<b>Max</b>	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%
<b>Min</b>	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
<b>1st Pctl</b>	7.96%	7.73%	7.54%	7.06%	6.00%	5.95%	5.66%	5.63%
<b>5th Pctl</b>	13.68%	13.13%	13.57%	13.07%	8.84%	8.60%	7.79%	7.77%
<b>10th Pctl</b>	17.68%	16.94%	19.23%	18.53%	11.44%	11.08%	9.76%	10.00%
<b>25th Pctl</b>	25.00%	23.96%	29.54%	28.14%	17.14%	16.71%	15.59%	15.95%
<b>30th Pctl</b>	26.95%	25.74%	32.35%	30.60%	18.75%	18.35%	17.46%	17.77%
<b>40th Pctl</b>	30.75%	29.40%	38.11%	36.39%	22.00%	21.49%	20.83%	21.03%
<b>50th Pctl</b>	34.68%	33.19%	43.50%	41.79%	25.19%	24.64%	23.93%	24.00%
<b>60th Pctl</b>	39.32%	37.76%	49.03%	48.00%	28.77%	28.04%	26.85%	26.67%
<b>70th Pctl</b>	45.00%	43.54%	55.38%	54.27%	32.73%	31.91%	29.74%	29.36%
<b>75th Pctl</b>	48.08%	46.90%	59.08%	57.86%	35.24%	34.41%	31.39%	30.93%
<b>80th Pctl</b>	52.17%	51.18%	63.63%	62.87%	38.36%	37.50%	34.07%	33.38%
<b>90th Pctl</b>	63.83%	63.39%	73.85%	73.94%	47.62%	47.05%	44.88%	43.29%
<b>95th Pctl</b>	73.39%	73.35%	80.79%	81.00%	57.06%	56.76%	55.39%	54.02%
<b>99th Pctl</b>	85.71%	85.71%	88.21%	88.00%	76.88%	76.50%	77.33%	75.11%

193. Paying more than 30 percent of income is considered “rent burdened.” Paying more than 50 percent of income on rent is considered “extremely rent burdened.”<sup>68</sup>

194. The table is easiest to read if one imagines that each application (in each of four categories, as split by CP and no CP) is arrayed from lowest rent burden to highest rent burden, and from lowest percentile to highest percentile. It is not, for example, until the 80th percentile of “rent as percentage of income based on total rent” where no subsidy is claimed (the leftmost of the four pairings) that both CP beneficiary and non-beneficiary applicants begin to be extremely

<sup>68</sup> See PS, ¶¶ 142-43.

rent-burdened (as shown in red).

195. For each of the four comparisons between CP beneficiary applications and non-beneficiary applications, the results show that, at each percentile, rent as a percentage of income is very similar. The percentile band at which applicants breach the percentage of income spent on rent to be designated as “rent burdened” – the first band highlighted in yellow – is identical as between CP beneficiary applications and non-beneficiary applications in the second through fourth comparisons, and virtually identical in the first. The percentile band at which applicants breach the percentage of income spent on rent to be “severely rent burdened” – the first band highlighted in red – is identical as between beneficiaries and non-beneficiaries in all four comparisons.

196. So, to the extent that rent-burden or severe rent-burden is a proxy for risk of displacement (or for the fear of the risk of displacement), there is no distinguishing between CP beneficiaries and non-beneficiaries as a matter of percentages of each sub-pool burdened. As noted, the incidence is not materially different as between CP beneficiaries and non-beneficiaries. The current lottery system as it exists with a community preference policy is no more “aimed” at dealing with displacement and fear of displacement than would be a system that did not have a community preference policy.

197. The disconnect or lack of fit between an argument that the policy is designed to deal with displacement and/or the fear of displacement, on the one hand, and what the data shows, on the other, is revealed even more clearly when comparing the *number* of applications from rent-burdened non-CP-beneficiaries with the number of applications from rent-burdened CP beneficiaries. For example, in the portion of the table that shows rent as a percentage of income based on contribution to rent for those applications where no subsidy is claimed, “rent-burdened” (more than 30 percent) occurs at the 70th percentile. This translates to more than 1.3 million

applications that came from rent-burdened or severely rent-burdened applicants who are non-beneficiaries;<sup>69</sup> by contrast, fewer than 70,000 applications came from rent-burdened or severely rent-burdened applicants who are CP beneficiaries. A significant disparity is present whichever of the four comparisons are used, and regardless of whether one looks at those who are rent-burdened or severely rent-burdened.

198. Even though a rent-burdened or a severely rent-burdened New Yorker who is a non-beneficiary might want to secure a lottery apartment to be spared the “anxiety of potential displacement,” the policy operates to hinder that outsider’s chances to be spared.

199. To put it another way, defendant, through its policy, tells a rent-burdened or severely rent-burdened New Yorker eligible for lottery housing that if you choose to remain in your existing CD, the rules are designed to increase your chances; but that if you choose to move to another CD, the rules are designed to reduce your chances.<sup>70</sup>

## **L. Participation analysis**

200. The policy reflects a judgment made by defendant: moves sought to be made within community district are to be valued more highly than moves sought to be made outside of community district. Does defendant’s judgment match what actual lottery applicants do?

201. In fact, it does not. I was able to analyze the application or applications that each *unique* household (there were close to 700,000 of them) made for any of the 168 lotteries, and I

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<sup>69</sup> The number of applications in each case is derived by multiplying the portion of the observations at and above the percentile referenced by the total observations in the category (*e.g.*, where the 70th percentile is referenced, the number of observations is multiplied by 30 percent).

<sup>70</sup> Professor Edward Goetz, an academic at the University of Minnesota who has been put forward by defendant as a proposed expert, agreed at his deposition that the community preference policy, if it is working as designed, reduces the chances of many families who want to move to different neighborhoods and could benefit from that mobility. *See* PS, at ¶ 182.

was able to distinguish between moves that were in-CD versus out-of-CD, and in-borough versus out-of-borough.

202. Table 15, below, classifies unique applications<sup>71</sup> both by how many lotteries they applied to and by the percentage of those lotteries that were for housing located out of their CD of lottery applications for each unique household.

<b>Table 15: Unique Lottery Entrants by Total Lotteries Entered (Down) and Percent of Applications to Projects Outside CD (Across)</b>							
	<b>0.00%</b>	<b>01 to 24.99%</b>	<b>25.00 to 49.99%</b>	<b>50.00 to 74.99%</b>	<b>75.00 to 99.99%</b>	<b>100%</b>	<b>Total</b>
<b>One Lottery</b>	38,848	0	0	0	0	224,560	263,408
	14.75%	0%	0%	0%	0%	85.25%	
<b>2-4 Lotteries</b>	4,601	0	1,612	14,862	5,198	104,265	130,538
	3.52%	0%	1.23%	11.39%	3.98%	79.87%	
<b>5-9 Lotteries</b>	2,461	152	899	6,191	20,474	69,159	99,336
	2.48%	0.15%	0.91%	6.23%	20.61%	69.62%	
<b>10-19 Lotteries</b>	2,081	87	778	4,207	29,844	46,643	83,640
	2.49%	0.10%	0.93%	5.03%	35.68%	55.77%	
<b>20 or more Lotteries</b>	2,048	363	1,722	4,486	60,885	38,721	108,225
	1.89%	0.34%	1.59%	4.15%	56.26%	35.78%	
<b>Total</b>	50,039	602	5,011	29,746	116,401	483,348	685,147
	7.30%	0.09%	0.73%	4.34%	16.99%	70.55%	

203. Regardless of how many lotteries a household entered (that is, whichever of the five ranges defined by number of lotteries entered), at least 80 percent of the households applied out-of-community-district a minimum of 75 percent of the time. When all of the ranges are combined, 87.54 percent of the households applied out-of-community-district at least 75 percent of the time, and only 7.30 percent of the households applied exclusively in-district.

204. There is thus no evidence of any substantial group of lottery applicants limiting themselves only to lotteries that occur in the CD from which they are applying; in contrast, there

<sup>71</sup> Excluding non-NYC households.



is clear evidence that the overwhelming percentage of unique applicant households have themselves made a decision that they value finding affordable housing somewhere in the City – even when that housing is not located in their existing community district.

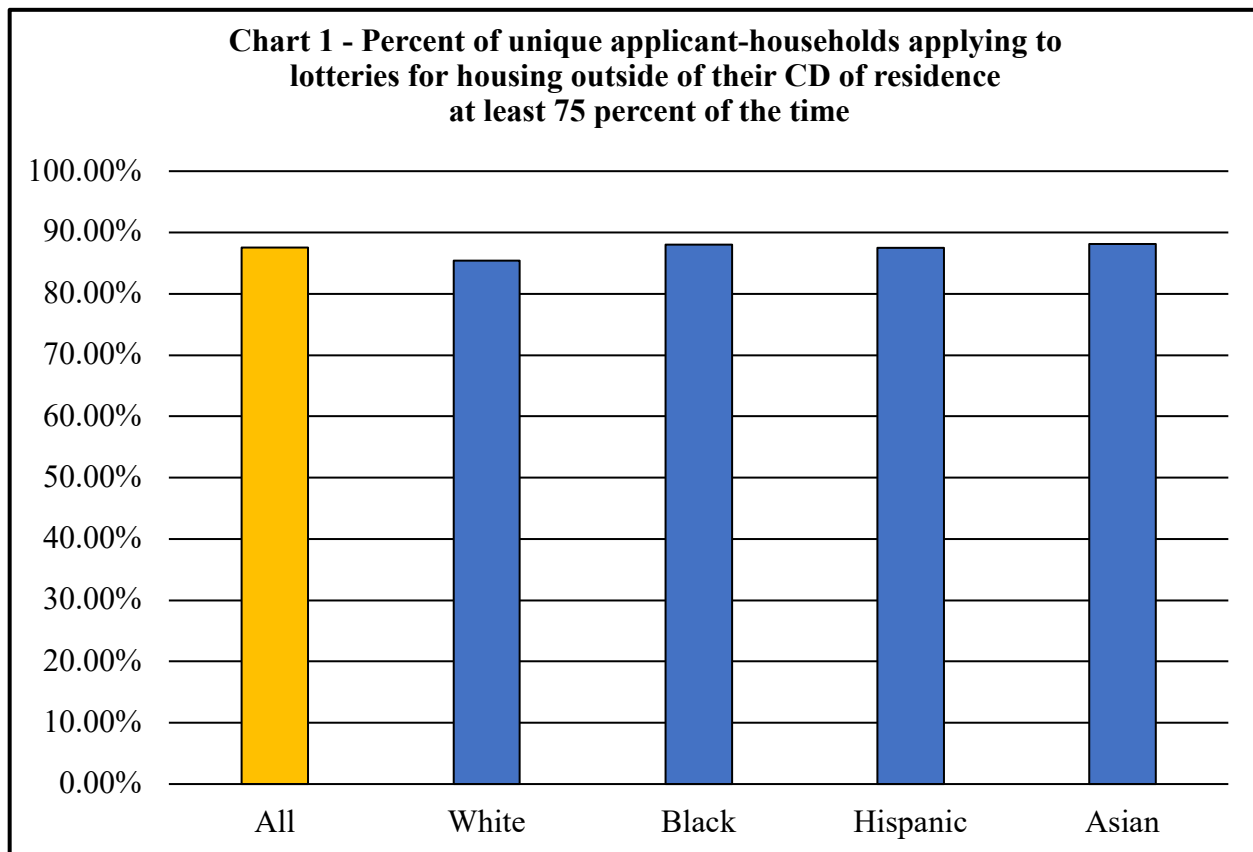
205. Table 16, below, changes the analysis of household application patterns from in-CD versus out-of-CD to in-borough versus out-of-borough.

<b>Table 16: Unique Lottery Entrants by Total Lotteries Entered (Down) and Percent of Applications to Projects Outside Borough (Across)</b>							
	<b>0.00%</b>	<b>01 to 24.99%</b>	<b>25.00 to 49.99%</b>	<b>50.00 to 74.99%</b>	<b>75.00 to 99.99%</b>	<b>100%</b>	<b>Total</b>
<b>One Lottery</b>	149,779	0	0	0	0	113,629	263,408
	56.86%	0%	0%	0%	0%	43.14%	
<b>2-4 Lotteries</b>	33,951	0	16,194	38,353	7,734	34,306	130,538
	26.01%	0%	12.41%	29.38%	5.92%	26.28%	
<b>5-9 Lotteries</b>	7,812	10,815	19,357	29,755	17,867	13,730	99,336
	7.86%	10.89%	19.49%	29.95%	17.99%	13.82%	
<b>10-19 Lotteries</b>	2,203	8,938	19,406	30,921	16,859	5,313	83,640
	2.63%	10.69%	23.20%	36.97%	20.16%	6.35%	
<b>20 or more Lotteries</b>	501	8,387	23,928	52,784	20,221	2,404	108,225
	0.46%	7.75%	22.11%	48.77%	18.68%	2.22%	
<b>Total</b>	194,246	28,140	78,885	151,813	62,681	169,382	685,147
	28.35%	4.11%	11.51%	22.16%	9.15%	24.72%	

206. Using the same ranges of lottery applications and the same exclusion of non-NYC households, the application patterns show that there is significant willingness to consider not just a change of community district, but a change of borough: approximately 56 percent of households enter out-of-borough lotteries at least 50 percent of the time.

207. These data are not consistent with any presumption that a household seeking to move to new affordable housing will generally limit or want to limit its search to its existing community district, or that such desire as a household may have to stay within its community district trumps that household's desire to find affordable housing in multiple places in the City.

208. The patterns described in this section hold true regardless of race, as shown in Exhibit 20 in relation to out-of-CD applications. Chart 1, below, using data presented in that exhibit, shows the percentage for all unique applicant households, and the percentage for all unique household applicants from each demographic group, that has applied to a lottery for housing lottery outside the CD of their residence at least 75 percent of the time. The data show a tight pattern, regardless of demographic group, of an overwhelming percentage (ranging between 85.36 percent and 88.15 percent) applying outside of their CD of residence *at least 75 percent* of the time.



209. Comparing in-borough versus out-of-borough applications, as shown in Exhibit 21, the percentage of households in each group that has applied outside of the borough of residence at least a majority of the time ranges as follows: 54.85 percent for Blacks; 55.97 percent for Hispanics; 57.16 percent for Whites; and 62.48 percent for Asians.

210. In sum, a 50 percent preference based on community district bears no relation to what actual lottery applicants are telling defendant through their lottery applications about the decisions they themselves choose to make about their housing options. The percentages of applications out-of-CD are far in excess of the percentage allocated by the community preference policy. Those application percentages provide a very different picture than one created by the community preference policy (where a family's choice to stay in place is valued more than is a family's choice to move).

#### **M. Concluding observations**

211. My analyses were able to examine the implementation of the community preference policy across the City and capture a key feature of that policy: the benefits and detriments to racial groups vary by CD typology.

212. Substantial and statistically significant disparities in the opportunity to compete existed both when all entrants were examined and when apparently eligible applicants were examined.

213. Substantial and statistically significant disparities at the bottom line existed as well for multiple demographic groups in the four majority CD typologies.

214. Both the robustness of the sample and analyzing techniques for disparate impact (168 lotteries for entrants, apparently eligible applicants, and awardees; plus 1,000 runs of a simulation for awardees, all examined by two different methods) underline both the existence and predictability of the impacts.

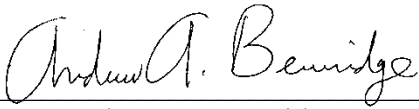
215. Both the robustness of the sample and analyzing techniques for perpetuation of segregation (145 lotteries for six racial pairings looking both at awardees and at apparently eligible

applicants; plus 1,000 runs of a simulation for awardees) underline both the existence and predictability that the removal of the community preference policy will enable there to be more of the more-integrative outsider moves than can currently be the case.

216. The policy prioritizes insider moves in a way that actual applicants do not.

217. The policy's distinctions between insiders and outsiders bear no relationship either to the similar distribution with each of the two groups in terms of rent burden or to the fact that far more outsiders are rent burdened and severely rent burdened than insiders.

Executed on March 4, 2020 in Westchester County, New York.

  
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Andrew A. Beveridge